ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

PRINCE WILLIAM SOUND AREA
ANNUAL FINFISH MANAGEMENT REPORT

1980

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PREFACE

This is the twenty-first annual management report prepared since the State assumed control of the fisheries from the federal government in 1960. The 1980 data is preliminary and will be finalized and corrected in subsequent reports. Data presented here supersedes information in previous management reports.

The report presents a brief description of the 1980 fishery and summarizes recent historical catch, escapement and related data on each species harvested by the commercial fishery.

The report is compiled primarily for use as a reference source for management purposes. Persons desiring additional information should direct a specific request to the area office in Cordova.

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INTRODUCTION

The commercial fisheries management area encompasses all coastal waters and inland drainages entering the northcentral Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). The area includes the Bering River, Copper River and all of Prince William Sound along with a total adjacent land area of approximately 38,000 square miles.

Salmon

The Prince William Sound area is divided into eleven management districts which correspond to the local geography and distribution of the five species of salmon harvested by the commercial fishery.

The Bering River district includes the area between Cape Martin on the west and Cape Suckling on the east including Controller Bay and Katalla Bay. This small drift gill net salmon fishery harvests about one percent of the area's sockeye catch and about 25 percent of the coho catch. Small catches of king, pink and chum salmon occur and amount to less than one percent of the district catch.

The Copper River district includes all waters between Cape Martin on the east and Hook Point, Hinchinbrook Island on the west, and is separated from Prince William Sound's Eastern District by a boundary line from Boswell Rock, Hinchinbrook Island to the radio tower at Whitshed Village on the mainland shore southwest of Cordova. The Copper River district supports the major area drift gill net salmon fishery and harvests all five species of salmon although the target species of the district are sockeye during the spring and summer fishery and coho in the fall. The district fishery harvests about 97 percent of the areas's king salmon catch, 65 percent of the sockeye, 72 percent of the coho, and incidental amounts of pink and chum salmon.

The Unakwik District is located in the north central part of Prince William Sound and includes the waters of Unakwik Inlet north of 61° 01' N. lat. The district was established to harvest small runs of sockeye salmon returning to Cowpen Lake and Miners Lake systems. Usually less than 10,000 sockeye are taken each year. The Unakwik season coincides with the Coghill district season.

The Coghill District, located in northwestern Prince William Sound, includes all of the water of Port Wells north of 60° 48' 30" N. lat., all the water within one nautical mile of the south shore of Esther Island including Esther Passage. (Prior to 1976 the western one-half of Port Wells was included in the Northwestern District). The Coghill District was established primarily to harvest the sockeye salmon returning to Coghill Lake; however, significant numbers of pinks and chums are taken and the numbers of these species commonly exceed the sockeye catch. There is a tremendous variation in the numbers of odd and even year pinks returning to Coghill River. Spawning escapement estimates have ranged from 552,060 in 1975 to an even year average of about 9,000 pinks. Small incidental catches of kings and cohos are taken each year. When the Coghill District season opens a large influx of gear moves into the district from the Copper River flats, and consequently, the Copper River effort is reduced by almost half.

The Eshamy District is located on the western central mainland shore of Prince William Sound. The district includes the water within one nautical mile of the mainland shore from the outer point on the north shore of Granite Bay on the south end of the district to the light on the south shore of the entrance to Port Nellie Juan on the north end of the district. The district was established to

manage the run of sockeye salmon returning to the Eshamy Lake system. The Eshamy district fishery catches all five species of salmon. Sockeye is the target species; however, substantial numbers of pinks and chums are intercepted which are bound for other districts in the Sound. Small numbers of kings and cohos are caught in the district.

The General Districts of Prince William Sound include the Eastern, Northern, Northwestern, Southwestern, Montague and Southeastern Districts, which include the remainder of Prince William Sound. The primary target species are pink and chum salmon. Forecasts of returning pinks and chums are made each year based on pre-emergent fry data, and purse seine seasons set accordingly. Season openings are usually published in the regulations, and season closures made by emergency order. Incidental and usually insignificant numbers of kings and cohos are also taken from the General Districts.

Legal gear for the salmon fishery includes purse seines and both drift and set gill nets. Drift gill net fishermen are the most numerous and are permitted to fish in the Bering River, Copper River, Coghill, Unakwik and Eshamy Districts. In 1980 around 400 drift gill net permit holders participated at least some time during the season. Set gill net gear is legal only in the Eshamy District, and five permit holders fished during the short season in that area. Purse seine gear is restricted to Prince William Sound proper and is utilized primarily to harvest pink and chum salmon. Over 240 purse seine fishermen participated during the peak of that fishery during the past season.

The 1980 season harvest amounted to over 15 million fish with an ex-vessel value of nearly $25 million (Table 1). This compares to an annual salmon harvest for the Prince William Sound area of approximately 6.7 million fish during the past decade (Table 2 and Figure 2). Runs of all species exceeded pre-season expectations and was highlighted by a record even-year return of pink salmon. The total catch was the second largest in the 85-year history of the commercial fishery and was surpassed only by the record harvest of a year ago.

Escapements were adequate for all districts and species with the exception of chum salmon in most districts of Prince William Sound proper.

Herring

The herring fisheries of the Prince William Sound area include: 1) a spring sac roe fishery; 2) a spring wild spawn on kelp fishery; 3) a pound herring spawn on kelp fishery, and; 4) a fall and winter bait and food fish fishery.

The Northern, Eastern and Montague Districts (Figure 14) have been established for the exclusive harvest of sac roe herring, while fish for bait and food markets may be taken in the General District which includes all waters of the Sound exclusive of the sac roe districts. Wild spawn on kelp harvests can occur in all districts, but only the kelp beds located in the bays and beach areas of Valdez Arm and Port Fidalgo have contributed significantly to this fishery. The pound herring spawn on kelp fishery has been restricted to a base of operation in a portion of Landlocked Bay in Port Fidalgo. Guideline harvest levels regulate the harvest for each of these fisheries which collectively amount to an annual harvest equivalent to 7,500 metric tons of herring (Figure 16). The total value of these fisheries to fishermen in 1980 was approximately three million dollars.

Herring have a long history of commercial fishing in the Prince William Sound Area dating back to 1914, and until about 1958 was used almost exclusively for reduction purposes. From the demise of the reduction fishery until 1969 only occasional catches were made for bait purposes. The year 1969 was the beginning of a new fishery where herring were taken for roe which was salted in containers and sold in Japanese markets. This herring sac roe fishery grew rapidly with good market conditions, reaching a peak harvest of 6,335.1 metric tons in 1973 (Table 39).

As a result of the intensity of the herring sac roe fishery, vulnerability and the high exploitation rate of the herring, a guideline harvest level of 5,000 tons was established in 1974. This has been exceeded three years (1974, 1975 and 1980) since the guideline harvest level was established (Table 39).

The herring spawn on kelp fishery started in 1969 at the same time the roe fishery was initiated. The first experimental harvest of herring spawn on kelp was taken from Johnston Cove and Landlocked Bay in northeastern Prince William Sound. It has grown into an annual fishery with a peak harvest of 415.9 metric tons in 1975 (Table 39). Recent concern about the depletion of kelp beds (Lamainaria sp.) resulted in several regulations. Notable of these was the recent Board of Fisheries regulation to limit the method of harvesting to a hand-held unpowered blade-cutting device, and required the kelp blades to be cut at least four inches above the stipe.

A herring pound fishery for the controlled production of spawn on kelp began in 1979 although the first significant production didn't develop until 1980.

1980 SEASON SUMMARY

Copper River District

Due to an anticipated weak return to the main Copper River, a virtual closure of the commercial fishery on sockeye salmon remained in effect throughout the season. Sockeye escapements were optimized by the adoption of a management plan that permitted a harvest of surplus king salmon while allowing only an incidental catch of sockeye salmon. Among other things the plan's management measures imposed gill net mesh size restrictions, reduced fishing time, prescribed maximum weekly king salmon catch quotas and allowed a maximum incidental catch of sockeye salmon. Gill net mesh size was limited to a minimum of 8 1/4 inches while weekly fishing time was reduced to a maximum of two six hour periods scheduled during periods of reduced catch potential. A maximum catch quota of 10,000 king salmon was possible over a four week period, and depending on the prevailing escapement trend, an incidental catch of sockeye salmon could not exceed 10-20% of the weekly king catch.

The season opened with the first six hour period on May 19. After assessing the available fishing effort and the fleet's catch capacity during this initial short opening, an additional five periods were allowed during the succeeding three weeks (Tables 3 and 4). Two periods were announced during each of the second and third weeks with openings scheduled closer to low slack tide in order to better maximize catch potential. Weather contributed to reduced catches during two of the periods, and along with a sudden drop in effort during the final week, the season king catch amounted to 8,449 fish. This compares to a ten year average of almost 21,700 king salmon from this district (Figure 3 and Table 5). Age - length analysis of king salmon from the commercial catch is shown in Table 6, and the escapement index (1971 - 1980) by system is presented in Table 7. Slightly more than 800 sockeye salmon were sold to local processors during the quota season. No price agreement was reached until the middle of July and most sockeye salmon caught prior to that time were retained by fishermen for personal use.

A sonar escapement enumeration system was installed at Miles Lake and monitored escapements to the main Copper River. The sonar unit was operational on May 18 and tabulated daily escapements until August 9 (Table 8). The season escapement totaled over 283,000 fish and managed to reach the lower end of the escapement goal of 250-350,000 by July 18 (Figure 4, Tables 8 and 9).

After almost a six week closure of the fishery it was estimated that 97% of the sockeye salmon bound for the main Copper River had already passed the commercial fishery by July 21. In an effort to harvest surplus delta stocks a 36-hour period was permitted starting on that date. Two 36-hour periods were announced each week thereafter until the resumption of regular weekly fishing periods during the first week of August (Table 4). The total season catch of 18,451 sockeye salmon compares with a previous ten year average of 555,000 (Table 5 and Figure 5).

Aerial surveys were flown throughout the season to follow escapements in both the Copper River and in important delta lakes and streams (Appendix B). Escapements to Copper River delta streams are some of the best observed in recent years. Tables 9, 10 and 11 compare the historical escapement estimates for both the delta and main river spawning grounds.

Age - length analysis data of sockeye salmon from the commercial catch is shown in Table 12.

Negotiations between fishermen and buyers over a price for coho salmon were still deadlocked on the eve of the start of that fishery and, as it turned out, no major local processors purchased cohos this season. One local cold storage processor and several outside cash buyers did participate and a loss of the season was averted. The coho run was strong, and although it appeared to be about a week earlier than normal, unusually moderate weather resulted in very little fishing time being lost this season. Fishing effort during the coho season was intense and managed an above average season catch of 220,000 fish (Table 4). The average coho harvest during the last decade in the Copper River district was 142,382 fish (Table 5 and Figure 6).

Coho escapements as indicated from aerial surveys were extremely good; in excess of 85,000 fish, the largest escapement ever recorded for this species in this district. Peak survey estimates of selected systems is presented in Appendix B.

Age - length analysis data of coho salmon from the commercial catch is found in Table 13.

Subsistence Fishery

Subsistence fishing for salmon in the Prince William Sound Area is permitted in the commercial fishing districts as well as in selected areas of the upper Copper River. Catches are monitored through the use of a mandatory permit system that is available to only Alaska residents.

In the commercial districts subsistence fishing is restricted to methods, means and times that are consistent with those of the commercial fishery. The number of subsistence fishermen operating in these districts has fluctuated widely over the years, but catches have generally remained small. The number of subsistence permits and reported catches for the Copper River delta and Prince William Sound proper in recent years are outlined in Tables 14, 15 and 16.

Subsistence fishing for salmon in the upper Copper River is permitted with dip nets and fishwheels in separate fishing districts. Due to a poor parent year sockeye salmon escapement and predicted marginal return in 1980, an extremely conservative approach was followed in the management of the upper Copper River subsistence fishery. Based on historical data analysis an estimated sockeye salmon return to the upper Copper River of only 217,000 indicated below minimum escapement levels as a possibility. In order to assure adequate escapements the Department advised the public before the subsistence season opened that levels of fishing time would be extremely restricted. A two day per week fishing period was announced in late May while acknowledging that sonar counts immediately prior to the season opening might necessitate a change in actual fishing time during the ensuing weeks. Considerable effort was expended to circulate news releases of the probable fishing schedules. Sonar counts in May verified the anticipated poor sockeye return, and a severely restricted subsistence fishery opened on June 1.

Throughout most of the Copper River subsistence fishing season, sonar counts indicated a run of 200,000 - 250,000 salmon which required a restriction in the Glennallen subdistrict to two days per week of sockeye salmon fishing for all but low income, traditional subsistence fishermen per the "allocation"

requirements of the management plan. After July 24 an additional day of fishing time was allocated as the anticipated sonar counts exceeded 250,000 salmon. The remainder of the season went without additional change as it related to sockeye salmon. The final sonar count of 283,856 (Table 8) supported the in-season use of the 250,000 - 300,000 escapement increment of the management plan.

The 1980 return of king salmon to the Copper River was near average thus allowing an unrestricted subsistence effort by dip netters. Dip netting for king salmon was allowed seven days per week from June 1 through July 11 when the numbers of king salmon available no longer justified the special open periods.

An excellent return of coho salmon in 1980 allowed an unrestricted subsistence fishery in September and a short reopening of the season in October. The subsistence season was reopened during early October at the request of a representative of the local Fish and Game Advisory Committee based upon the extreme strong return in the commercial fishery.

In 1980 there were 2,804 dip net and 399 fishwheel permits issued for the Chitina area of the upper Copper River. The total was nearly the same as the 1979 number with slightly more dip net permits and slightly less fishwheel permits. Preliminary figures show individuals fishing these permits harvested 21,437 sockeye, 2,256 kings and 639 cohos. The total catch was less than the 1979 catch (Table 17).

Bering River District

Based on a forecasted weak run to the Bering River this district remained closed for the duration of the sockeye salmon run. The average sockeye catch from this district has averaged about 37,100 during the last ten years (Figure 7). The season was finally opened here for regular three and one-half days per week fishing periods after August 11. Aerial survey estimates indicated sockeye escapements were adequate with a peak index of 31,800 fish (Table 11).

Effort was intense here throughout the coho run and the season harvest of 108,535 (Table 18) was the second largest ever recorded in the history of this fishery (Table 19 and Figure 8).

Although coho escapement estimates into this district are difficult to obtain due to the glacial nature of many of the streams, the spawning areas that could be surveyed indicated that escapements were adequate.

General Purse Seine Districts

The Prince William Sound general purse seine fishery was scheduled to open on July 14. Aerial spawning escapement surveys conducted prior to this date revealed an earlier than normal buildup of pink salmon in many streams, By the first week of July a surplus of pink salmon was available in the Eastern and Northern Districts and these were opened earlier than scheduled on July 9. No effort actually materialized until July 14 when a price settlement was finalized. All remaining districts (excluding Montague and Eshamy Districts) were opened to regular weekly fishing after that time. Peak effort occurred during the last week of July when 241 seine boats made deliveries.

The commercial salmon catch by all gear, by species, from Prince William Sound for the years 1971 - 80 is summarized in Table 21a.

Pink salmon catches were strong from the beginning and daily harvests exceeded 400,000 fish per day for five consecutive weeks with a peak daily catch of 1.2 million fish reported on August 4 following a weekend closure. Processing was provided by four major local operators in addition to several outside processors. Local capacity was exceeded during the peak of the run and fish tendered out of the area to Seward, Kenai, Kodiak, etc. provided the necessary relief to keep up with the load. With the exception of a one day suspension of buying on August 5-6 by the four local canneries, they managed to get through the peak.

Aerial spawning surveys were conducted regularly throughout the season and escapement trends continued to develop at an acceptable rate in all major districts through the end of July. It wasn't until late in the first week of August that declining catches in the Southeastern District and reduced escapements in both the north and southeast sectors signaled the development of potential shortages. In order to guarantee minimal escapements in both districts, the fishery was closed there on the evening of August 7. The Northern District remained closed for the duration of the season.

The Eastern District was the next area to show the effects of continuous fishing and post peak declines in escapements developed there also. With a general decrease in the catch and escapement the entire Eastern District was closed on the evening of August 14. The downward trend spread throughout the Sound and the remaining districts were shut down indefinitely with the closure of regular weekly fishing on August 15.

Following a season long closure of Montague Island it was apparent by mid August that the minimum pink salmon escapement goal was assured there. The closure of the Southeastern District since August 7 had reversed the escapement trend and a late run surplus was available there also. To assess late run strength in the Southeastern and the northern half of the Montague District a 15-hour period was announced for August 18. Effort was light for the opening and produced less than 22,000 fish.

A two day late season opening was also permitted in portions of the Eastern District on August 21-22 to harvest surplus pinks. This produced a harvest of 124,000 pinks and concluded the pink salmon fishery for the season.

The return of 15.8 million pink salmon in 1980 was the largest even year run in the recorded history of Prince William Sound and second only to the all time record run last season (Table 23, Figures 9 and 10). This season's commercial catch of 14.2 million pinks was less than a million shy of last year's record harvest (Tables 20 and 21). Pink salmon escapement estimates for 1980 total 1.6 million fish with escapement goals being achieved in all districts (Table 22). The escapement was the largest for an even year since the 1964 earthquake and was the first time since then that the even year escapement goal has been secured in the Montague District.

The total run of chum salmon amounted to 565,084 (Table 22) and compares to a ten year average of 538,000 (Figure 11). Chum escapements were generally poor with the single exception of the Northern District where the desired goal was attained. The estimated season escapement of over 87,000 chum salmon for the entire Sound was less than half of the goal and marked the seventh consecutive season that chum salmon escapements have fallen short of desired goals (Table 24 and Figure 11). Weak chum escapements appear to be the result of several factors.

First of all, the total run was below average, and being an incidental catch to the more numerous pink salmon, can't be harvested at the same level and still come up with a surplus (pinks were exploited at a nine to one catch to escapement ratio). They are also targeted on where schooled and traveling with the aid of spotter planes and deep seine nets. They are again sought out in shallow terminal areas.

Efforts to manage for improved chum escapements were limited to a Fidalgo subdistrict closure on August 13 because of lagging chum escapements in important spawning streams at the head of Fidalgo. Chum salmon escapements in the Northern District indirectly benefited from the early closure of that district on August 7. Even here the strongest show came from the very earliest and latest segments of the run with weak escapements in the middle.

Age composition by sex of the chum salmon commercial catch is summarized in Table 25.

Coghill and Unakwik Districts

The season opened as scheduled in the Coghill and Unakwik Districts on June 18, but a price settlement did not materialize until July 13 and occurred after a majority of the sockeye run. The virtual absence of any fishing pressure resulted in an escapement of over 142,000 sockeye salmon (Table 29) and far exceeded the goal and any previous recorded escapement (Table 28 and Figure 12). Despite the late start the fleet ended up with a sockeye catch of over 57,000 fish in the Coghill District (Table 26), and when combined with the record escapement amounted to an excellent run of nearly 200,000 fish. The age composition of the sockeye salmon sampled from both catch and escapement is summarized in Table 30. This season's sockeye catch compares to the ten year average of around 107,000 (Table 27). Peak effort materialized during the last week of July when 111 drift gill net boats made deliveries. The fishery remained open in the Coghill District until the close of regular weekly fishing on August 15 and ended up with a record even year harvest of over 505,000 pink salmon compared to a recent ten year average of 214,000 (Table 27).

The Coghill River field camp climatological and stream observations are presented in Appendix C.

The late season price settlement also eliminated effort in the Unakwik District until July 14. The season remained open here until the close of regular weekly fishing on August 15. The total catch of 16,357 salmon (Table 31) was also below historic levels (Table 32).

Eshamy District

The sockeye return to Eshamy was quite strong despite the preseason forecast for a total closure. Early season escapements were far ahead of any historic record through the middle of July; however, it declined sharply following the opening of the seine season in the Southwestern district. The escapement trend fluctuated widely through the end of July, and not until the end of the first week of August was it certain that the escapement would reach the upper end of the goal of 30,000 sockeye salmon (Table 36). The total escapement amounted to 44,000 fish and was the largest escapement since 1969 and compares to a ten year average of less than 14,232 (Table 35 and Figure 13). The age composition of the sockeye salmon sampled at the weir during the season is summarized in Table 30.

The district was opened on August 13 for the first time since 1977 and remained open until the close of the regular weekly period on September 5. A peak effort of 14 drift gill net and five set net fishermen participated and managed a season catch of nearly 2,700 sockeye along with 5,300 pinks and a few chums and cohos (Table 33).

Table 34 summarizes the ten year catch by species and gear for the district.

The climatological and stream observations taken at the Eshamy River weir is presented in Appendix D.

Hatchery Returns

Returns to both the Cannery Creek and San Juan hatcheries were better than forecasted and they were able to secure the necessary brood stock to meet their egg-take goals.

An expanded closed area adjacent to the Cannery Creek hatchery was designated early in the season, but probably would not have been necessary with the large return and the closure of the Northern District earlier than surrounding districts.

Egg surplus to hatchery needs will be hatched and released as fry next spring in Hobo Creek which is on the western shore of the Coghill District.

Chum salmon eggs for hatchery brood stock requirements were more difficult to secure and ultimately came from selected streams in the Northern and Eastern Districts where chums were surplus to escapement requirements.

Herring Sac Roe Fishery

In 1980 a management plan was adopted which incorporated some major changes for the seine fishery including the establishment of the Eastern District and an April 1 season opening date. The calendar opening date and the establishment of the new district definitely assisted in the management of the seine fishery.

As directed by the management plan, the sac roe seine season opened on April 1. Initial effort was concentrated along the western shore of the entrance to Port Gravina in the Eastern District. The first catches were made on the evening of April 2, and by April 5th 498 metric tons of roe herring had been landed. Roe recovery percentage varied from 7% to 13 % but averaged slightly over 10%.

From the opening of the season until April 4 aerial survey conditions were very poor; however, on April 5 improving weather allowed a survey of all districts for the first time during the season. During that survey an estimated 20,000 tons of herring were observed in Port Chalmers and Stockdale Harbor located at the northwestern tip of Montague Island. On the same flight an estimated 3,000 tons of herring were also observed along a short stretch of beach on Hawkins Island which is outside of the sac roe harvest areas.

On Sunday, April 6, almost all vessels that had been fishing in the Eastern District were enroute to the Montague District. By 2:00 p.m. on April 7 after receiving reports from tender vessel operators, and estimating tonnage of herring yet to be delivered from fishery vessels still holding sets, it was apparent that the guideline harvest level would be attained. An emergency order announcement was made closing the season at 6:00 p.m. the same afternoon.

Surveys of this district continued after the closure. It is interesting to note that coincidental with the season closure spawning occurred in Port Chalmers. Some of the spawning was probably induced by the fishery. The spawning expanded into Stockdale Harbor and Zaikoff Bay the following day and only a limited amount of spawning was observed after that time. Peak herring abundance in the Montague District was recorded two days after the close of the fishery on April 9 (Table 37 and Figure 15). The fish subsequently moved offshore and were never observed again in this area. Table 38 presents survey estimates for the years 1974-80.

Table 39 and Figures 16 and 17 present pertinent harvest information relative to the fishery.

No seine harvests occurred in the Northern District.

Although the seine fishery developed fairly smoothly, it was not without its problems. Due to uncertain early market conditions for sac roe herring, buyers and fishermen alike were somewhat hesitant to mobilize for this fishery. Because of this and the earlier than normal appearance of marketable herring, fewer tenders were present on the fishing grounds when the fish became available in the fishery. In the absence of tenders some fishermen were forced to hold their sets for long periods and couldn't deliver before the herring began to die in the seines. When this happened seine sets were dumped. The total extent of these losses are unknown, but five "piles" of dead herring were observed during aerial surveys on the day following the closure. This may have amounted to 400 or 500 tons of herring.

Gill Net Sac Roe Fishery

The management plan also established a gill net fishery for sac roe herring with a separate guideline harvest level and restricted it to the Northern District.

After the closure of the seine fishery the staff continued to fly aerial surveys of the Northern District and on April 15 an estimated 24,500 tons of herring were observed throughout the Valdez Arm closed water area. After that survey it was apparent that if a gill net season were to be allowed some adjustment in the area open to fishing would have to be made. To avoid possible conflict between kelp harvesters and gill net fishermen two gill net harvest areas, remote from traditional kelping areas, were designated and opened to fishing at 6:00 a.m., April 17 (Figure 14).

Effort for the first week of the fishery was confined to the Whalen Bay area located at the head of Port Fidalgo. During that week 177 metric tons of herring were harvested with an average roe recovery of 13.5%. As catches declined in the Port Fidalgo gill net area fishermen located marketable herring in Port Valdez. This fishery continued until May 5. On that day processors informed fishermen that they would no longer be purchasing fish and the season was closed. During the season 16 permit holders participated in the fishery and delivered 240 metric tons of sac roe herring (Table 39).

Spawn on Kelp Fishery

The spawn on kelp fishery was opened by emergency order on April 23. Approximately 630 kelp harvest permits were issued. Ten buyers were on the kelping grounds and processed the harvest taken by the 469 divers participating in the fishery.

In conjunction with this fishery pre-season underwater surveys are conducted in four study areas which are located within or adjacent to historic kelping areas. Estimates of standing seaweed crops and species composition are obtained during these surveys. Estimates obtained in 1980 indicated that standing crops were less than half of what was available in 1979. Since the study plots were not commercially harvested in 1979 the decline is thought to be the result of natural mortality or environmental factors such as wave action and current surge against the mature kelp beds resulting in the dislodging and detaching of plants from the substrate. Figure 18 presents comparable biomass estimates for the years 1977-80 while Figure 19 shows areas of spawning and kelping.

It was apparent after the first day of harvesting that the season had been opened earlier than necessary. Quality kelp was found only in Johnson Cove and a small beach area immediately below Tatitlek Village in Boulder Bay. With the extremely heavy effort these areas were well cropped by the end of the second day. On April 25 the season was closed until spawning became more widespread. At that time 125 metric tons of kelp had been harvested.

During the following five days spawning occurred throughout most of the traditional kelp harvest areas and the season was reopened for ten hours on April 30. The season total exceeded the guideline harvest level by 77 metric tons. Statistics for this fishery are presented in Table 39 and Figure 20.

The harvest in excess of the guideline harvest level was due in part to illegal harvesting and stockpiling of kelp during the closure between periods. Kelp harvesting continued after the closure of the first period in the form of a non traditional "subsistence fishery". Conversations with kelp divers after the closure indicated that the major portion of this "subsistence harvest" was sold during open commercial harvest periods or immediately after the season was closed. New subsistence regulations have been proposed and if adopted by the Board of Fisheries should prevent a recurrence of this problem.

Herring Pound Fishery

This was the second year that the impoundment of herring to produce spawn on kelp was attempted in Prince William Sound.

In 1980 a permit application deadline of March 15 was required and by that date 14 permits had been issued. Of the 14 permits issued only four permittees actually constructed pounds, and of these only two were used for the production of spawn on kelp.

In order for permit holders to obtain herring for introduction into impoundments a special seine season was announced in specified areas of the closed water portions of the Northern District. On April 14 herring schools became available for seining in the vicinity of the impoundment sites, and the announcement was made opening the special season.

The first seine set was not made until April 20. On that day approximately seven tons of herring were taken in one set in Boulder Bay. The herring were transferred from seine to pound and towed approximately seven to ten miles back to the impoundment site in Landlocked Bay. The herring began to spawn immediately upon introduction into the pound. By April 22 all spawning in the pound had ceased and on that day 880 pounds of spawn on Macrocystis kelp and 320 pounds of Laminaria sp. kelp was harvested and processed.

On April 29 another 20 to 35 tons of herring were seined in Landlocked Bay and impounded with approximately 400 pounds of Laminaria sp. kelp. On May 2 this kelp was harvested and yielded 1,451 pounds of product. The quality of the product resulting from this final effort was considered by permit holders to be excellent with a much denser egg cover than any of the product obtained from the wild kelp harvest.

As required by the condition listed in the permit, the herring pounds were left in place until all herring attached to the structure had hatched. On May 24 the pounds were dismantled and stored.

Bait/Food Fishery

All of Prince William Sound, except designated sac roe harvest areas, is open after September 15 for the harvest of herring for bait and food markets.

Although seines, trawls and gill nets are all legal gear, only trawls and seines are presently used.

The 1980-81 season opened as scheduled on September 15. Three seine boats and six boats utilizing three pair trawls participated in this fishery. Reports from fishermen indicated that large concentrations of herring were available in Orca Bay near Cordova, and by November 7 all available markets had been satisfied. Preliminary catch figures indicated that 1,306 tons of herring had been landed which is 94 tons below the 1,400 ton guideline harvest level, and a record high catch for this fishery (Table 40 and Figure 21).

Herring Research

Herring research in Prince William Sound includes the biological sampling of commercial harvests to assess overall population condition and recruitment of herring into the fishery. Hydroacoustic surveys are also conducted from a Department vessel to help locate pre-spawning concentrations of herring and to monitor their movements prior to the sac roe season. Activities also include ground and aerial surveys of spawning areas to document the extent and magnitude of spawning. The ground observations include pre and post-season underwater surveys which are aimed at evaluating effects of past kelp harvests and growth and recruitment of the kelp in harvested areas. A new project by the University of Alaska Sea Grant Program is examining the herring stocks utilized in the bait and sac roe fisheries to determine whether or not the stocks exploited are the same individual stock or two entirely different stocks. If a single stock contributes substantially to both fisheries, management strategies can be developed to protect against overharvest during years of low abundance. Stock samples have been collected for the past year from both the sac roe and bait fisheries and are presently undergoing laboratory analysis.

Figure 22 compares age data graphically between the sac roe gill net, sac roe seine and bait fisheries observed in 1980. Figure 23 displays age analysis comparisons for the years 1974-80.

Age, length, weight and sex composition of herring sampled from the fisheries is presented in Tables 41 through 45.

MISCELLANEOUS

During the course of each season miscellaneous data are collected on the commercial fisheries in Prince William Sound that do not relate to any particular fishery but provide a valuable reference for information unavailable elsewhere. Items of this nature are discussed briefly in this section.

The 1980 calendar weeks presented in Table 46 were used in reporting catch statistics where fishing was conducted on a schedule with standard weekly fishing periods. The calendar weeks are included here as a reference for those tables in the report that summarize catches by week. Whevener possible, however, catch statistics are summarized by individual fishing periods to better reflect the management strategy and catch trends that aren't evident in the more general weekly catches.

A fair to good economic condition exists at the present time as indicated by the continuing trend of upgrading the area's fishing fleet and the addition of a number of new fishing vessels. This trend has been supported primarily by record returns of pink salmon and above average catches of coho salmon. This has helped to offset reduced sockeye catches by the gillnet fleet in the past few years. The fleet is continuing to diversify by engaging in several fisheries instead of depending on a single species or gear type.

The overall economic situation for 1980 was on par with the record pink harvest of last season. Although the Copper River and Bering River districts were closed to sockeye salmon fishing this season, a quota king salmon fishery and near record harvests in the coho fishery helped balance the situation. The record even year pink salmon catch in all Prince William Sound districts bolstered catches of other species from all districts of the management area and produced a total catch of over 15 million fish.

Prices for all species except pink salmon (Tables 47 and 48) declined from last season despite the national inflationary trend which has impacted all phases of the fishing and processing industry. Prices for sac roe herring and herring spawn on kelp were also much lower than the previous year but were balanced somewhat by larger than average harvests. The average prices paid for salmon, shellfish and miscellaneous fish are outlined in Table 47.

Average weights by species from the commercial catches are summarized in Table 49.

The list of finfish buyers and processors operating in Prince William Sound are included in Appendix A, and the combined case pack and frozen salmon production by all local processors are summarized in Table 50. Production for the years 1972 - 1980 is presented in Table 51.

Table 1. Total salmon catch by district, Prince William Sound Area, 1980.

District	Chinook	Sockeye	Coho	Pink	Chum	Total
General Purse Seine	88	136,457	2,283	13,667,712[1]	403,549[1]	14,220,089
Coghill	198	57,378	1,174	505,210	72,776	636,736
Unakwik	0	1,553	3	13,726	1,075	16,357
Eshamy	0	2,661	63	5,331	264	8,319
P.W.S. Subtotal	286	198.049	3,523	14,201,979	477,664	14,881,501
Copper River	8,449	18,451	219,779	3,872	34	250,585
Bering River	0	0	108,535	0	1	108,536
AREA TOTAL	8,735	216,500	331,837	14,205,851	477,699	15,240,622

1 Includes 346,728 pink salmon and 6 chum salmon from hatchery harvests.

Table 2. Commercial salmon catch by species from all Prince William Sound districts, 1971-80[1]

Year	Catch by Species					
	King	Sockeye	Coho	Pink	Chum	TOTAL
1971	20,142	741,945	327,697	7,312,730	579,552	8,982,066
1972	23,003	976,115	124,670	57,090	46,088	1,226,966
1973	22,638	473,044	199,019	2,065,844	740,017	3,500,562
1974	20,602	741,340	76,041	458,619	89,210	1,385,812
1975	22,325	546,634	84,109	4,453,041	101,286	5,207,395
1976	32,755	1,009,035	160,495	3,022,429	370,668	4,595,382
1977	22,864	953,782	179,777	4,537,808	576,395	6,270,626
1978	30,435	505,509	312,930	2,917,499[2]	489,771	4,256,144
1979[3]	19,708	367,215	316,339	15,608,153[4]	347,314	16,658,729
1980[3]	8,735	230,193	331,837	14,219,466	477,699	15,267,930
10-Yr Average	22,321	654,481	211,291	5,465,268	381,800	6,735,161

[1] Includes catches by all gear types from the General purse seine, Coghill, Unakwik, Eshamy, Copper River and Bering River districts.

[2] Includes 133,648 pinks from hatchery harvests.

[3] Preliminary.

[4] Includes 214,930 pinks from hatchery harvests.

[5] Includes 346,728 pinks from hatchery harvests.

Table 3. Commercial catch by period and species during the king and sockeye salmon season, Copper River District, 1980.

Period				King Salmon		
Week	Dates	Hours fished	Fishing effort	Weekly Quota	Catch	Sockeye Salmon Catch
21	5/18-24	6	93	2,000	1,933	92
22	5/25-31	12[1]	151	4,000	3,125	162
23	6/1-7	12[1]	153	3,000	2,753	474
24	6/8-14	6	94	1,000	605	81
25-29	6/15-7/19	Closed				
30	7/20-26	72[2]	48		21	12,587
31	7/27-8/2	72[2]	42		0	2,931
Season Total[3]				10,000	8,449	18,451

1 Two separate six hour periods fished during the week.
2 Two separate 36-hour periods fished during the week.
3 Includes catches after 8/4 when regular 3 1/2 day per week fishing resumed for the duration of the season. Does not include catches of 219,779 coho salmon, 3,872 pink salmon, and 34 chum salmon.

Table 4. Commercial salmon catch by period and species, Copper River District, 1980.[1]

Dates	Fishing time (hours)	Effort	Catch by Species					
			King	Sockeye	Coho	Pink	Chum	Total
5/19	6	93	1,933	92				2,025
5/27	6	151[2]	1,835	73				1,908
5/30	6	151[2]	1,290	89				1,379
6/3	6	153[2]	1,638	138				1,776
6/5	6	153[2]	1,115	336				1,451
6/11	6	94	605	81				686
7/21-26	72[3]	48	21	12,587	422	774	15	13,819
7/28-8/2	72[3]	42		2,931	2,036	573	9	5,549
8/4-7	84	41	1	1,654	6,515	968	1	9,139
8/11-14	84	91	11	346	24,460	1,358	5	26,180
8/18-21	84	182		121	34,730	193	3	35,047
8/25-28	84	231		3	42,714	5		42,722
9/1-4	84	209			42,333	1	1	42,335
9/8-11	84	203			34,605			34,605
9/15-18	84	153			21,152			21,152
9/22-25	84	89			10,812			10,812
TOTAL			8,449	18,451	219,779	3,872	34	250,585

[1] Fishing opened and closed by emergency order from 5/19 until 8/1 in accordance with the regulatory management plan. Fishermen were restricted to gill nets with a minimum mesh size of 8 1/4" prior to 7/21. After 8/4 regular weekly fishing resumed from 6 am, Monday until 6 pm, Thursday. After 9/1 weekly periods were from 7 am, Monday until 7 pm, Thursday

[2] Estimate of weekly effort used for both periods during the week since effort by individual period is not available.

[3] Included two separate 36-hour periods from 6 am, Monday until 6 pm, Tuesday and from 6 pm, Thursday until 6 am, Saturday but catch by individual period is not available.

Table 5. Copper River District salmon catch by species, 1971-80.

Year	Catch by species					
	King	Sockeye	Coho	Pink	Chum	TOTAL
1971	16,486	616,801	208,915	1,762	5,287	849,251
1972	22,349	727,144	103,211	2,304	717	855,725
1973	19,948	332,816	132,272	8,964	10,173	504,173
1974	18,980	607,766	46,625	9,839	664	683,874
1975	19,644	335,384	53,805	236	807	409,876
1976	31,483	865,254	111,900	3,392	178	1,012,207
1977	22,089	619,140	131,356	23,185	335	796,105
1978	29,062	249,872	220,338	3,512	2,233	505,017
1979[1]	17,308	80,720	195,620	1,246	84	294,978
1980[1]	8,449	18,451	219,779	3,872	34	250,585
10-year average	20,580	445,335	142,382	5,831	2,051	616,179

[1] Preliminary

Table 6. Copper River king salmon age, length analysis, commercial catch, 1980.

Age Class	Males			Females			Total	
	Number	Percent	Average Length mm	Number	Percent	Average Length mm	Number	Percent
1.2	2	2.0	594.5				2	.9
1.3	22	22.2	850.0	40	33.3	849.6	62	28.3
2.2				1	.8	809.0	1	.5
1.4	59	59.6	966.3	62	51.7	957.1	121	55.3
2.3	6	6.1	847.8	11	9.2	848.8	17	7.8
1.5	2	2.7	1061.0				2	.9
2.4	7	7.1	988.6	6	5.0	891.3	13	5.9
2.5	1	1.0	1049.0				1	.5
Total	99	45.2		120	54.8		219	100.0

Table 7. King salmon escapement index - Copper River.

Area	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
East Fork Chistochina R.	512	348	476	137	71	289	132	137	810	575		
Gulkana River	269	1,200	623	1,317	741	777	1,090	921	1,380	718		
Mendeltna Creek	56	49	15	15	38*	35	73	52	5	3		
Kaina Creek	81	89	172	55	123*	37	91	125	279	247		
St. Anne Creek	4	25	26*	32	26*	15	10	24	16	8		
Manker Creek	30	4	17	29	19*	6	15	20	16	35		
Grayling Creek	45	47	47	49	48*	17	48*	92	153	66		
Little Tonsina R.	200	129*	100	65	161	98	35	285	285	70		
Indian River	20*	13	20*	4	6	61	20	9	29	24		
Total without interpolated counts	1,197	1,775	1,450	1,654	979	1,335	1,446	1,665	2,973	1,746		
Counts missing	(1)	(1)	(2)		(5)		(2)					
Total with interpolated counts	1,217	1,904	1,496	1,654	1,233	1,335	1,514	1,665	2,973	1,746		

* Interpolated. 16,737/10 = 1,673

Table 8. Copper River sonar counts, Miles Lake site, 1980.

Date	SOCKEYE North Bank	SOCKEYE South Bank	SOCKEYE Daily	SOCKEYE Cumulative	KING North Bank	KING South Bank	KING Daily	KING Cumulative
MAY								
18	23	195	218	218	4	34	38	38
19	18	149	167	385	3	26	29	67
20	24	197	221	606	4	35	39	106
21	9	79	88	694	2	14	16	122
22	42	349	391	1,085	7	62	69	191
23	64	530	594	1,679	11	93	104	295
24	53	441	494	2,173	9	78	87	382
25	76	637	713	2,886	14	112	126	508
26	113	944	1,057	3,943	25	208	233	741
27	227	1,888	2,115	6,058	33	277	310	1,051
28	181	1,512	1,693	7,751	44	366	410	1,461
29	116	964	1,080	8,831	10	84	94	1,555
30	204	1,699	1,903	10,734	51	422	473	2,028
31	388	3,232	3,620	14,354	42	351	393	2,421
JUNE								
1	1,112	4,145	5,257	19,611	172	641	813	3,234
2	1,833	5,228	7,061	26,672	172	492	664	3,898
3	2,299	5,138	7,437	34,109	461	1,030	1,491	5,389
4	2,129	6,867	8,996	43,105	263	849	1,112	6,501
5	1,313	8,433	9,746	52,851	75	481	556	7,057
6	746	4,661	5,407	58,258	36	225	261	7,318[1]
7	289	1,804	2,093	60,351				
8	186	1,163	1,349	61,700				
9	489	3,054	3,543	65,243				
10	1,007	6,294	7,301	72,544				
11	1,660	10,372	12,032	84,576				
12	1,598	9,986	11,584	96,160				
13	1,048	6,552	7,600	103,760				
14	781	4,880	5,661	109,421				
15	1,008	6,300	7,308	116,729				
16	780	4,875	5,655	122,384				
17	992	6,197	7,189	129,573				
18	930	5,811	6,741	136,314				
19	330	2,061	2,391	138,705				
20	496	3,101	3,597	142,302				
21	571	3,571	4,142	146,444				
22	545	3,409	3,954	150,398				
23	537	3,359	3,896	154,294				
24	686	4,531	5,217	159,511				
25	704	4,400	5,104	164,615				
26	496	3,099	3,595	168,210				
27	472	2,949	3,421	171,631				
28	596	3,728	4,324	175,955				

Continued

Table 3, Continued

Date	SOCKEYE North Bank	SOCKEYE South Bank	SOCKEYE Daily	SOCKEYE Cumulative	KING North Bank	KING South Bank	KING Daily	KING Cumulative
JUNE								
29	530	3,315	3,845	179,800				
30	478	2,987	3,465	183,265				
1	491	3,068	3,559	186,824				
2	464	2,901	3,365	190,189				
3	566	3,538	4,104	194,293				
4	405	2,529	2,934	197,227				
5	397	2,482	2,879	200,106				
JULY								
6	417	2,608	3,025	203,131				
7	454	2,837	3,291	206,422				
8	413	2,582	2,995	209,417				
9	389	2,428	2,817	212,234				
10	502	3,140	3,642	215,876				
11	795	4,968	5,763	221,639				
12	660	4,128	4,788	226,427				
13	238	1,487	1,725	228,152				
14	232	1,447	1,679	229,831				
15	240	1,503	1,743	231,574				
16	347	2,168	2,515	234,089				
17	472	2,947	3,419	237,508				
18	811	5,067	5,878	243,386				
19	774	4,839	5,613	248,999				
20	698	4,362	5,060	254,059				
21	528	3,298	3,826	257,885				
22	438	2,735	3,173	261,058				
23	296	1,847	2,143	263,201				
24	187	1,166	1,353	264,554				
25	224	1,399	1,623	266,177				
26	173	1,083	1,256	267,433				
27	165	1,033	1,198	268,631				
28	96	602	698	269,329				
29	55	345	400	269,729				
30	65	405	470	270,199				
31	49	304	353	270,552				
1	114	711	825	271,377				
2	143	891	1,034	272,411				
AUG								
3	105	659	764	273,175				
4	98	610	708	273,883				
5	105	653	758	274,641				
6	121	756	877	275,518				
7	85	530	615	276,133				
8	23	143	166	276,299				
9	33	206	239	276,538				
TOTAL			276,538		1,438	5,880	7,318	

[1] Possible King migration beyond this date; however, increased water flow precluded segregation.

Table Copper River sonar counts, Miles Lake site, 1980.

Date	SOCKEYE North Bank	SOCKEYE South Bank	SOCKEYE Daily	SOCKEYE Cumulative	KING North Bank	KING South Bank	KING Daily	KING Cumulative
MAY								
18	23	195	218	218	4	34	38	38
19	18	149	167	385	3	26	29	67
20	24	197	221	606	4	35	39	106
21	9	79	88	694	2	14	16	122
22	42	349	391	1,085	7	62	69	191
23	64	530	594	1,679	11	93	104	295
24	53	441	494	2,173	9	78	87	382
25	76	637	713	2,886	14	112	126	508
26	113	944	1,057	3,943	25	208	233	741
27	227	1,888	2,115	6,058	33	277	310	1,051
28	181	1,512	1,693	7,751	44	366	410	1,461
29	116	964	1,080	8,831	10	84	94	1,555
30	204	1,699	1,903	10,734	51	422	473	2,028
31	388	3,232	3,620	14,354	42	351	393	2,421
JUNE								
1	1,112	4,145	5,257	19,611	172	641	813	3,234
2	1,833	5,228	7,061	26,672	172	492	664	3,898
3	2,299	5,138	7,437	34,109	461	1,030	1,491	5,389
4	2,129	6,867	8,996	43,105	263	849	1,112	6,501
5	1,313	8,433	9,746	52,851	75	481	556	7,057
6	746	4,661	5,407	58,258	36	225	261	7,318[1]
7	289	1,804	2,093	60,351				
8	186	1,163	1,349	61,700				
9	489	3,054	3,543	65,243				
10	1,007	6,294	7,301	72,544				
11	1,660	10,372	12,032	84,576				
12	1,598	9,986	11,584	96,160				
13	1,048	6,552	7,600	103,760				
14	781	4,880	5,661	109,421				
15	1,008	6,300	7,308	116,729				
16	780	4,875	5,655	122,384				
17	992	6,197	7,189	129,573				
18	930	5,811	6,741	136,314				
19	330	2,061	2,391	138,705				
20	496	3,101	3,597	142,302				
21	571	3,571	4,142	146,444				
22	545	3,409	3,954	150,398				
23	537	3,359	3,896	154,294				
24	686	4,531	5,217	159,511				
25	704	4,400	5,104	164,615				
26	496	3,099	3,595	168,210				
27	472	2,949	3,421	171,631				
28	596	3,728	4,324	175,955				

Continued

Table Continued

Date	SOCKEYE North Bank	SOCKEYE South Bank	SOCKEYE Daily	SOCKEYE Cumulative	KING North Bank	KING South Bank	KING Daily	KING Cumulative
JUNE								
29	530	3,315	3,845	179,800				
30	478	2,987	3,465	183,265				
1	491	3,068	3,559	186,824				
2	464	2,901	3,365	190,189				
3	566	3,538	4,104	194,293				
4	405	2,529	2,934	197,227				
5	397	2,482	2,879	200,106				
JULY								
6	417	2,608	3,025	203,131				
7	454	2,837	3,291	206,422				
8	413	2,582	2,995	209,417				
9	389	2,428	2,817	212,234				
10	502	3,140	3,642	215,876				
11	795	4,968	5,763	221,639				
12	660	4,128	4,788	226,427				
13	238	1,487	1,725	228,152				
14	232	1,447	1,679	229,831				
15	240	1,503	1,743	231,574				
16	347	2,168	2,515	234,089				
17	472	2,947	3,419	237,508				
18	811	5,067	5,878	243,386				
19	774	4,839	5,613	248,999				
20	698	4,362	5,060	254,059				
21	528	3,298	3,826	257,885				
22	438	2,735	3,173	261,058				
23	296	1,847	2,143	263,201				
24	187	1,166	1,353	264,554				
25	224	1,399	1,623	266,177				
26	173	1,083	1,256	267,433				
27	165	1,033	1,198	268,631				
28	96	602	698	269,329				
29	55	345	400	269,729				
30	65	405	470	270,199				
31	49	304	353	270,552				
1	114	711	825	271,377				
2	143	891	1,034	272,411				
AUG								
3	105	659	764	273,175				
4	98	610	708	273,883				
5	105	653	758	274,641				
6	121	756	877	275,518				
7	85	530	615	276,133				
8	23	143	166	276,299				
9	33	206	239	276,538				
TOTAL			276,538		1,438	5,880	7,318	

[1] Possible King migration beyond this date; however, increased water flow precluded segregation.

Table 9. Sockeye salmon escapement estimates, Copper River District, 1970-80.

Year	Aerial Survey Counts			Upper River Sonar Count[3]
	Delta[1]	Upper River[2]	District Total	
1970	36,712	73,945	110,657	
1971	50,170	70,232	120,402	
1972	44,135	32,031	76,166	
1973	26,801	64,345	91,146	
1974	19,493	29,417	48,910	
1975	32,060	11,190	43,250	
1976	41,000	24,276	65,276	
1977	43,945	72,763	116,708	
1978	65,850	23,488	89,338	194,372
1979	80,700	29,523	110,223	248,709
1980	119,200	55,595	174,795	283,856
Average	50,915	44,264	95,179	242,312

1 Peak aerial survey counts for seven index spawning areas.
2 Peak aerial survey counts for twenty index spawning areas.
3 Counting station located at Miles Lake outlet and includes all species with an escapement goal of 250-350,000 fish.

Table 10. Copper River aerial survey index of sockeye salmon spawning escapements, 1971 - 1980.

System	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Eyak Lake	5800	12275	6000	4625	17500	8500	11000	16250	21000	22500			
McKinley Lake	1700	600	1800	2000	8000	6000	15000	17500	25000	27500			
39 Mile Creek	8270	14910	5511	2400	2500	3500	4500	6500	17500	18000			
Lake Tokun	23000	1850	8000	1468	1200	8500	5500	6600	6500	17000			
Little Martin Lake	3000	3000	1500	1500	2000	8000	1550	3500	2000	6500			
Martin Lake	3400	6500	2000	1500	460	4000	6087	10500	12000	17650			
Martin River Slough	5000	5000	1990	5000	400	2500	3100	6300	4200	10000			
Copper River Delta Subtotal	51270	44135	26801	18493	32060	41000	46737	67150	88200	119150			
Salmon Creek	275*	0	200	400	0 P	300	275*	50	450	1500			
Tonsina Lake	500	250	300	200	250	900	432*	4	775	650			
Mahlo Creek	12400	1525	4500	500	314 G	600	5200	300	450	1000			
St. Anne Creek	25100	1900	7400	2100	449 G	1700	7000	1150	730	5000			
Mendeltna Creek	870	1950	1200	332	325	900	3900	725	350	1125			
Keg Creek	810*	0	1435	190	256	125	725	1050	1300	2325			
Dickey Lake	170	73	2500	10	25	0	650	75	13	250			
Swede Lake	9	400	350	15	6	10	750	80	155	400			
Paxson Lake Outlet	3400	2700	4300	1000	550	2100	3800	2500	1900	3800			
Inlet to Mud Creek	7900	5818	10500	14300	2100	4200	6000	2700	5400	8200			
Mud Creek and Lake	600	850	500	300	400	1100	650	150	460	740			
Mud Cr. - Summit Lake	3250	1675	5700	2700	1200	1900	5900	800	2600	3075			
Fish Lake	700P	4500	6300	800	2800	900	8000	2650	1700	3175			
Bad Crossing #1 & #2	6	0	9275	650	5	16	8400	600	650	75			
Fish Creek)	900	650	2200	450	200	250	6900	1300	350	900			
Mentasta Lake)	2295	800	2700	700	450	600	3500	3600	2500	3200			
Suslota Lake	4550	4830	3400	400	0	100	300	1200	1000	1700			
Tanada Lake	4093	930	10	3100	700	6100	9100	2625	5175	13700			
Long Lake	2000	3000	150	750	1100	2450	877	1425	3100	2650			
Tana River	404*	180	1425	520	60	25	404*	504	465	2130			
Upper Copper River Subtotal	70232	32031	64345	29417	11190	24276	72763	23488	29523	55595			
TOTAL	121502	76166	91146	47910	43250	65276	119500	90638	117723	174745			

* = interpolated. P = poor. G = ground survey.

Table 11. Escapement estimates, Copper River delta and Bering River, sockeye salmon.

Stream/Lake	1974	1975	1976	1977	1978	1979	1980*	1981
Eyak Lake	4,625	17,500	8,500	11,500	13,450	13,500	22,500	
McKinley Lake	2,000	8,000	6,000	15,000	18,000	25,000	27,550	
39 Mile	2,400	2,500	3,500	4,500	6,500	17,500	18,000	
Tokun Lake)	1,468	1,200	8,500	4,201	6,600	6,500	17,000	
Tokun Outlet)		2,000	2,500	700	4,000	10,000	7,100	
Martin Lake)	1,000	460	4,000	4,094	10,500	10,000	17,650	
Pothole Lake)		3,000	3,000	550	1,100	5,000	8,000	
Little Martin Lk.	1,500	2,000	8,000	1,550	4,500	4,000	6,500	
Martin River	4,000	1,500	1,500	1,450	3,500	8,200	3,500	
Ragged Pt. Lake	2,000	2,500	4,000	3,500	5,500	20,000	13,000	
Martin Sloughs	5,000	400	2,500	3,100	6,300	4,200	10,000	
Martin Lk. Outlet	4,000	1,500	2,500	1,450	3,500	-	9,000	
Total	27,993	42,560	54,500	51,595	83,450	123,900	159,800	
Bering Lake	20,580	4,000	40,000	8,000	7,000	13,500	12,000	
Dick Creek	6,600	1,971	2,000	1,500	6,300	11,000	11,000	
Shepard Creek	15,000	150	5,500	NC-glacl.	6,000	NC-silt	7,800	
Kushtaka Lake	75	75	2,500	"	3,500	2,500	1,000	
Stillwater Creek	NS	300	NC-silt	"	-	NC-silt	NS	
Total	42,255	6,496	50,000	9,500	22,800	27,000	31,800	

* Preliminary

Table 12. Copper River sockeye salmon age, length analysis, commercial catch, 1980.

Age Class	Males			Females			Total	
	Number	Percent	Average Length mm	Number	Percent	Average Length mm	Number	Percent
0.2	1	.8	534	1	.8	521	2	.8
0.3				2	1.6	574	2	.8
1.1	2	1.6	306.5				2	.8
1.2	35	28.5	528.7	29	23.8	540.2	64	26.1
2.2	8	6.5	547.4	3	2.5	554	11	4.5
1.3	68	55.3	533.9	84	68.9	545.1	152	62.0
1.4	1	.8					1	.4
2.3	8	6.5	580.9	3	.25	571.3	11	4.5
Total	123	50.2		122	49.8		245	100.

Table 13. Copper River coho salmon age, length analysis, commercial catch, 1980.

Age Class	Males			Females			Total	
	Number	Percent	Average Length mm	Number	Percent	Average Length mm	Number	Percent
1.1	100	42.2	600.3	41	33.3	614.0	141	39.2
2.1	135	57.0	717.1	81	65.9	640.0	216	60.0
3.1	2	.8	633.5	1	.8	589.0	3	.8
Total	237	65.8		123	34.2		360	100.0

Table 14. Prince William Sound Area subsistence fishery, 1980.

Area	Number Permits Issued	Type of Gear	King	Sockeye	Coho	Other[2]	Total
Upper Copper River[1]	2,804	Dip Net	1,767	12,287	578	29	14,661
Upper Copper River[2]	399	Fishwheel	489	9,150	61	96	9,796
Copper River Flats[3]	39	Gillnet	19	27	17		63
Prince William Sound[4]	25	Gillnet			6		6
Prince William Sound[4]	1	Seine		7			7
McKinley Lake[5]	2	Gillnet				166	173
Total	3,270		2,275	21,437	662	291	24,709

1 Compiled from reports received through 1/9/81.

2 Includes pink salmon, whitefish, steelhead, cutthroat, Dolly Varden, lamprey, lingcod and grayling.

3 Catch from 12 fishermen; 17 permits were not used and 6 fishermen were unsuccessful.

4 Catch from 2 fishermen; 9 permits were not used and 4 fishermen were unsuccessful.

5 Catch from 1 fisherman.

Table 15. Copper River Delta gill net salmon subsistence catch and effort, 1960 - 1980.

	PERMITS					CATCH			
		Returned							
Year	Issued	Unused	Unsuccessful	Successful	Total	King	Sockeye	Coho	Total
1960	13	No Record	No Record	Unknown	No Record			158	158
1961	14	"	"	"	14	60	137	99	296
1962	14	"	"	"	No Record	44	135	3	182
1963	8	0	2	6	8	3	13	157	173
1964	5	2			3	14			14
1965	31	5	2	13	20	12	459	85	556
1966	45	10	2	19	31	47	175		222
1967	61	19	9	28	56	83	153		236
1968	17	8	1	6	15	11	36		47
1969	49	13	7	13	33	16	63	85	164
1970	32	3	1	23	27	66	179		245
1971	29	9	12	5	26	10	32	4	46
1972	104	5		75	80	149	569	53	771
1973	94			89	89	153	326	180	659
1974	9	2	2	1	5	5	4	2	11
1975	2			2	2	0	5	0	5
1976	27			14	14	1	10	0	11
1977	23			22	22	10	71	0	81
1978	34	19		9	28	37	18	12	67
1979	49	20	4	17	41	45	26	17	88
1980	39	17	6	12	35	19	27	17	63

Table 16. Prince William Sound salmon subsistence catch and effort, 1960-80[1].

Year	PERMITS Issued	PERMITS Returned	CATCH King	Sockeye	Coho	Pink	Chum	Unknown[2]	Total
1960	50			139	505	1292	75	150	2,161
1961	12		1	41	123	732	3		900
1962	9				119	214	142		475
1963	9		3		406	298	24		731
1964	15			11		900			911
1965	22	16				179	25		204
1966	3	3		3	19	20	50		92
1967	4	3			4	4			8
1968	4	3			20	156		22	198
1969	7	3			16				16
1970	1	1							
1971	3	2				46			
1972									
1973	19	16			289				289
1974	3	1							
1975	2	0							
1976									
1977	4	4							0
1978	3	2							0
1979	15	2							0
1980	26	15		7	6				13

[1] Includes only catches from Prince William Sound proper.

[2] Catches not reported by species.

Table 17. Copper River subsistence fishery data, 1948 - 1980.

Year	Catch		Permits Issued			Catch by Species			
	Dip Net	Fishwheel	Dip Net	Fishwheel	Total	Sockeye	Chinook	Coho	Other
1948	5,100								
1949	5,500								
1952	2,136					1,601	535		
1954	3,145	Species Combined, and Gear Combined				3,057	88		
1955	2,086					1,767	319		
1957	7,753					7,241	281	108	
1958	13,263					12,909	354		
1960	1,179	5,660	32	26	58	6,739	136	25	
1961	1,777	12,419	307	59	366	15,472	388	550	
1962	3,203	11,101	435	117	552	14,543	848	381	
1963	2,124	12,395	514	110	624	14,055	464	558	
1964	4,133	7,749	794	158	952	11,915	725	103	
1965	7,215	5,813	982	115	1,097	12,760	644	52	
1966	7,452	9,188	1,132	110	1,242	16,718	555		
1967	6,146	8,360	1,166	125	1,291	14,457	419		
1968	8,040	6,071	1,235	112	1,347	14,819	644	233	
1969	18,054	6,220	1,415	113	1,528	27,604	719	224	
1970	22,700	9,886	3,220	267	3,487	36,500	427	554	
1971	28,115	9,370	4,168	374[1]	4,542	37,517	1,363	363	
1972	18,996	7,854	3,485	205	3,690	26,850	1,501	248[2]	
1973	16,407	10,943	3,840	305	4,145	27,350	1,856	51[3]	
1974	15,143	7,657	3,305	288	3,593	22,800	1,141	163[4]	
1975	7,694	5,626	2,452	350	2,802	13,320	1,705		
1976	12,130	8,321	2,512	451	2,963	20,451	2,017	17	
1977	22,612	12,751	3,526	540	4,066	35,363	2,171	454	
1978	12,569	6,638	3,313	392	3,705	19,207	2,050	633	
1979	11,887	10,251	2,730	470	3,200	22,138	2,372	705	
1980	14,661	9,716	2,804	399	3,203	21,437	2,256	639	125

1 Last use of Dip Net/Fishwheel Combination permits.
2 First issue of permits at Chitina.
3 Last year permits were denied fishermen who failed to return their previous year permits.
4 Issue of permits at Chitina and Glennallen only.

Table 18. Commercial salmon catch by period and species, Bering River District, 1980[1]

Dates	Effort	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
8/11-14	0						0
8/18-21	12			2,525			2,525
8/25-28	68			23,833		1	23,834
9/1-4	101			35,327			35,327
9/8-11	79			31,033			31,033
9/15-18	49			11,360			11,360
9/22-25	27			4,457			4,457
TOTAL		0	0	108,535	0	1	108,536

[1] Fishing opened by emergency order on 8/11 and regular weekly fishing continued for the duration of the season. Prior to 8/30 weekly fishing was from 6 am, Monday until 6 pm, Thursday and after 9/1 weekly periods were from 7 am, Monday until 7 pm Thursday.

Table 19. Bering River District salmon catch by species, 1971-80.

Year	Catch by species					
	King	Sockeye	Coho	Pink	Chum	TOTAL
1971	105	36,776	88,231	4	---	125,116
1972	107	51,445	19,825	3	1	71,381
1973	285	15,426	65,348	2	5	81,066
1974	32	4,208	28,615	7	2	32,864
1975	162	21,637	24,162	---	---	45,961
1976	228	30,908	42,423	43	1	73,603
1977	127	14,445	47,218	192	221	62,203
1978	331	33,554	91,097	266	2,391	127,639
1979[1]	384	139,029	113,916	6,853	23,190	283,372
1980[1]	0	0	108,535	0	1	108,536
10-year Average	176	34,743	62,937	737	2,581	101,174

[1] Preliminary

Table 20. Commercial salmon catch by species, by week in the general purse seine districts, Prince William Sound, 1980.[1]

Period	Effort	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
7/ 9 - 11[2]	0	0	0	0	0	0	0
7/14 - 18	211	26	42,634	571	2,058,128	104,765	2,206,124
7/21 - 25	240	33	26,272	199	2,460,089	80,774	2,567,367
7/28 - 8/1	241	23	30,453	189	3,455,081	89,848	3,575,594
8/ 4 - 8[3]	235	6	22,107	558	3,175,645	72,695	3,271,011
8/11 - 15[4]	217	0	14,983	672	2,036,548	51,102	2,103,305
8/18 [5]	56[6]	0	1	21	21,199	3,208	24,429
8/21 - 22[7]	63	0	7	73	124,294	1,151	125,525
Total		88	136,457	2,283	13,330,984	403,543	14,220,039[8]

[1] Weekly fishing periods in the general purse seine districts are from 0600h, Monday through 2100h, Friday unless altered by emergency order.

[2] The Eastern and Northern districts were opened at 0600h, 9 July. However, no fishing occurred until the start of the next weekly period following a settlement of fish prices on Sunday, 13 July.

[3] The Northern and Southeastern districts were closed until further notice after 0600 h, 7 August.

[4] The Port Fidalgo subdistrict was closed until further notice after 1800 h, 13 August followed by an indefinite closure of the entire Eastern district after 2100 h, 14 August. The Northwestern and Southwestern districts were closed for the duration of the season following the end of the regular weekly period at 2100 h, 15 August.

[5] The Southwestern district and the Montague district north of 60° 09' 38" N. lat. were opened for a 15 hour period from 0600 h until 2100 h.

[6] Effort estimated by aerial survey.

[7] Portions of the Eastern district were opened for 39 hours from 0600 h, 21 August until 2100 h, 22 August. Port Valdez, the western half of Valdez Arm, the head of Port Fidalgo and all waters south of Porcupine Point remained closed.

[8] Includes 346,728 pink salmon and 6 chum salmon from hatchery harvests.

Table 21. Commercial salmon catch by species in the general purse seine districts, Prince William Sound, 1971-80[1].

YEAR	Catch By Species					TOTAL
	King	Sockeye	Coho	Pink	Chum	
1971	3,130	41,346	30,036	7,227,763	519,599	7,821,874
1972[2]	396		192	2		590
1973	2,151	22,223	995	1,905,012	617,488	2,547,869
1974[2]	1,215		548	4		1,767
1975	1,744	29,842	5,753	4,208,074	65,410	4,310,823
1976	855	43,888	6,070	2,897,535	250,424	3,198,772
1977	450	104,863	691	3,861,972	395,329	4,363,305
1978	340	9,177	1,392	2,793,938[3]	354,839	3,159,686
1979[4]	867	59,510	4,949	15,307,774[5]	261,181	15,634,281
1980[4]	88	150,150	2,283	13,691,327[6]	403,549[7]	14,247,397
10-Year Average[8]	1,203	57,625	6,521	6,486,674	358,477	6,910,500

[1] Includes purse seine catches from the Eastern, Northern, Northwestern, Southwestern, Montague and Southeastern Districts. Also includes troll catches during 1971-76.

[2] Purse seine season closed. Catches were made by troll gear.

[3] Includes 133,648 hatchery sales fish.

[4] Preliminary

[5] Includes 214,930 hatchery sales fish.

[6] Includes 346,728 hatchery sales fish.

[7] Includes 6 hatchery sales fish.

[8] Average does not include 1972 or 1974.

Table 21a. Commercial salmon catch by all gear, by species, Prince William Sound, 1971-80.[1]

Year	Catch by Species					
	King	Sockeye	Coho	Pink	Chum	Total
1971	3,551	88,368	30,551	7,310,964	574,265	8,007,699
1972[2]	547	197,526	1,634	54,783	45,370	299,860
1973	2,405	124,802	1,399	2,056,878	729,839	2,915,323
1974[2]	1,590	129,366	801	448,773	88,544	669,074
1975	2,519	189,613	6,142	4,452,805	100,479	4,751,558
1976	1,044	112,809	6,171	3,018,991	370,478	3,509,493
1977	648	310,358	843	4,513,082	572,610	5,397,541
1978	1,042	222,083	1,495	2,913,721[3]	485,147	3,623,488
1979[4]	2,016	147,466	6,803	15,608,153[5]	324,040	16,088,478
1980[4]	286	198,049	3,523	14,201,979[6]	477,664[7]	14,881,501
10-Year Average	1,565	172,044	5,935	5,458,012	376,844	6,014,401

1 Includes purse seine, drift gill net and set gill net catches from the general purse seine, Coghill, Unakwik and Eshamy Districts in Prince William Sound proper. Also includes troll gear catches during 1971-76.

2 General purse seine season closed.

3 Includes 133,648 hatchery sales fish.

4 Preliminary

5 Includes 214,930 hatchery sales fish.

6 Includes 346,728 hatchery sales fish.

7 Includes 6 hatchery sales fish.

Table 22. Final pink and chum salmon returns to Prince William Sound, 1980.

District	Catch	Pink Salmon Escapement Goal	Pink Salmon Estimated Escapement	Pink Salmon Total Run
Eastern		403,750 - 484,500	515,380	
Northern		140,000 - 168,000	171,410	
Northwestern & Coghill		262,500 - 315,000	338,100	
Southwestern & Eshamy		112,500 - 135,000	134,860	
Montague		106,250 - 127,500	114,170	
Southeastern		225,000 - 270,000	302,190	
TOTAL	14,201,979[1]	1,250,000 - 1,500,000	1,576,110	15,778,089

District	Catch	Chum Salmon Escapement Goal	Chum Salmon Estimated Escapement	Chum Salmon Total Run
Eastern		87,200 - 109,000	32,160	
Northern		29,400 - 36,750	34,250	
Northwestern & Coghill		48,600 - 60,750	14,460	
Southwestern & Eshamy		3,400 - 4,250	40	
Montague		11,400 - 14,250	280	
Southeastern		20,000 - 25,000	6,230	
TOTAL	477,664[1]	200,000 - 250,000	87,420	565,084

[1] Catches are preliminary and include 346,728 pink salmon and 6 chum salmon from hatchery harvests.

Table 23. Pink salmon runs, Prince William Sound, 1960-80.

Year	ESCAPEMENTS							Commercial Catch	Total Run
	Eastern	Northern	Northwestern Coghill	Southwestern Eshamy	Montague	Southeast	Total		
1960	475,073	133,653	203,575	155,788	214,987	167,747	1,350,823	1,841,896	3,192,719
61	706,790	123,900	448,180	133,990	289,290	496,830	2,198,980	2,298,218	4,497,198
62	650,300	253,490	417,190	107,950	317,360	271,720	2,018,010	6,742,316	8,760,326
63	378,050	77,760	354,230	49,760	78,750	417,190	1,355,740	5,295,378	6,651,118
64	485,470	349,010	353,030	172,800	121,220	360,150	1,841,680	4,206,896	6,048,576
1965	258,680	54,970	187,760	62,720	77,000	255,930	897,060	2,460,471	3,357,531
66	489,800	255,710	200,940	110,980	42,050	201,150	1,300,630	2,699,418	4,000,048
67	321,520	167,300	544,080	109,750	23,800	300,270	1,466,720	2,626,340	4,093,060
68	360,300	136,630	201,790	165,510	44,100	183,440	1,091,770	2,452,168	3,543,938
69	328,960	147,880	264,750	132,510	63,470	218,060	1,155,630	4,828,579	5,984,208
1970	382,730	109,240	170,130	69,260	73,190	139,640	944,190	2,809,996	3,754,186
71	529,820	161,540	614,530	104,080	337,540	373,900	2,121,410	7,310,964	9,432,374
72	317,450	91,610	66,270	27,680	28,860	75,550	607,420	54,783	662,203
73	264,850	44,840	563,510	66,030	106,340	184,340	1,229,910	2,056,878	3,206,798
74	229,370	186,130	200,520	141,750	11,800	89,170	858,740	448,773	1,307,513
1975	570,830	44,270	580,170	77,860	110,950	234,210	1,618,290	4,452,805	6,071,095
76	446,470	123,380	116,730	51,200	12,260	115,560	865,600	3,018,994	3,884,594
77	465,970	62,150	426,670	226,060	196,970	315,510	1,693,330	4,514,431	6,207,761
78	268,940	159,870	200,950	220,610	48,680	156,830	1,055,610	2,780,073[1]	3,835,683
79	782,420	223,580	241,120	264,710	323,490	1,091,970	2,927,290	15,393,223[1]	18,320,513
1980[1]	515,380	171,410	338,100	134,860	114,170	302,190	1,576,110	13,855,251[1]	15,431,361

[1] Does not include hatchery harvests.

Table 24. Chum salmon runs, Prince William Sound, 1960-80.

Year	ESCAPEMENTS							Commercial Catch	Total Run
	Eastern	Northern	Northwestern Coghill	Southwestern Eshamy	Montague	Southeast	Total		
1960	92,100	24,729	40,458	4,800	16,782	23,008	201,877	381,858	583,735
61	117,950	50,420	70,940	4,750	34,380	59,910	338,350	224,401	562,751
62	238,660	67,670	96,020	10,610	34,190	39,690	486,840	891,880	1,378,720
63	148,090	68,390	114,250	5,330	15,070	20,030	371,160	942,900	1,314,060
64	176,840	64,750	136,590	3,560	31,650	29,160	442,550	539,047	981,597
1965	69,180	20,980	39,690	1,840	17,500	46,480	195,670	201,043	396,713
66	85,480	39,440	42,150	3,420	32,720	20,160	223,370	426,628	649,998
67	97,420	50,930	15,290	2,360	11,060	10,700	187,760	274,234	461,994
68	99,350	31,530	37,310	5,100	1,590	21,400	196,280	342,939	539,219
69	81,140	9,770	43,390	2,170	1,710	26,310	164,490	320,977	485,467
1970	58,180	6,100	22,000	770	3,370	11,910	102,330	230,661	332,991
71	79,930	16,190	34,570	1,210	25,620	9,260	166,780	574,265	741,045
72	134,780	79,030	50,520	2,850	5,190	29,310	301,680	45,370	347,050
73	267,210	143,420	89,790	1,130	2,930	42,110	546,590	729,839	1,276,429
74	92,840	53,830	45,010	200	90	2,910	194,880	88,544	283,424
1975	28,220	7,820	7,410	580	0	2,760	46,790	100,479	147,269
76	17,870	26,520	38,460	90	0	950	83,890	370,478	454,368
77	53,200	36,360	41,640	4,480	560	8,370	144,610	575,839	720,449
78	102,290	25,410	27,650	500	0	6,030	161,880	485,147	647,027
79	57,450	17,040	18,660	80	0	4,450	97,680	324,040	421,720
1980	32,160	34,250	14,460	40	280	6,230	87,420	477,658[1]	565,078

[1] Preliminary. Doesn't include 6 chums harvested at San Juan hatchery.

Table 25. Chum salmon commercial catch age composition, by sex, Prince William Sound, 1980.

	Age Class				
Commercial Catch	3	4	5	6	Total
Males					
Number	146,348	161,394	4,433	0	312,175
Percent	46.88	51.70	1.42	0.00	55.68
Females					
Number	102,575	141,487	4,423	0	248,485
Percent	41.28	56.94	1.78	0.00	44.32
Sexes Combined					
Number	248,923	302,881	8,856	0	560,660
Percent	44.40	54.02	1.58	0.00	100.00

Table 26. Commercial salmon catch by species, by period, by gear type, Coghill district, Prince William Sound, 1980. 1/

Period	Effort 2/	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
			DRIFT GILL NET				
6/18 - 19	2		396		4	28	428
6/23 - 26	8		2,124	4	198	427	2,753
6/30 - 7/4	16	1	11,639	9	1,141	1,029	13,819
7/7 - 11	14	3	14,255	45	2,427	2,332	19,062
7/14 - 18	111	64	18,391	379	70,995	23,852	113,681
7/21 - 25	93	80	4,280	327	52,434	20,188	77,309
7/28 - 8/1	97	48	2,004	236	107,267	12,153	121,708
8/4 - 8	83		1,416	26	102,997	4,942	109,381
8/11 - 15	31		174	2	20,504	1,270	21,950
Total Gill Net		196	54,679	1,028	357,967	66,221	480,091
			PURSE SEINE				
7/14 - 18			1,831		62,756	1,462	66,049
7/21 - 25		2	610	146	37,326	4,416	42,500
7/28 - 8/1			11		13,002	218	13,231
8/4 - 8			247		34,159	459	34,865
Total Purse Seine		2	2,699	146	147,243	6,555	156,645

continued

Table 26. (continued)

Period	Effort	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
			COMBINED GEAR				
6/18 - 19			396		4	28	428
6/23 - 26			2,124	4	198	427	2,753
6/30 - 7/4		1	11,639	9	1,141	1,029	13,819
7/7 - 11		3	14,255	45	2,427	2,332	19,062
7/14 - 18		64	20,222	379	133,751	25,314	179,730
7/21 - 25		82	4,890	473	89,760	24,604	119,809
7/28 - 8/1		48	2,015	236	120,269	12,371	134,939
8/4 - 8			1,663	26	137,156	5,401	144,246
8/11 - 15			174	2	20,504	1,270	21,950
Total All Gear		198	57,378	1,174	505,210	72,776	636,736

1/ The season opened in the Coghill district on 18 June with weekly fishing periods from 0600 h, Monday until 2100 h, Thursday prior to 1 July and from 0600 h, Monday until 2100 h, Friday after 30 June.

2/ The season opened by regulation on 18 June, however effort was minimal until the start of the regular weekly period on 14 July following a settlement of fish prices on 13 July.

Table 27. Coghill District salmon catch by species and gear, 1971-80.

Year	Peak Effort	Catch by Species					Total
		King	Sockeye	Coho	Pink	Chum	
				Drift Gill Net			
1971	133	73	29,862	54	4,006	11,149	45,144
1972	142	67	134,628	296	5,961	18,503	159,455
1973	160	144	74,426	237	61,328	68,311	204,446
1974	212	156	95,610	103	98,149	51,428	245,446
1975	311	525	142,864	357	99,492	32,438	275,676
1976	229	102	54,334	72	53,219	89,170	196,897
1977	207	124	154,342	49	332,859	127,476	614,850
1978	420	469	193,899	64	49,527	110,679	354,638
1979[1]		546	75,657	1,790	259,462	56,857	394,312
1980[1]	111	196	54,679	1,028	357,967	66,221	480,091
10-year Average		240	101,030	405	132,197	63,223	297,095
				Purse Seine			
1971	68	348	15,652	393	64,877	41,680	122,950
1972	NO FISHING						
1973	73	40	2,856	18	68,918	16,403	88,235
1974	45	192	4,273	22	54,268	7,720	66,475
1975	45	246	4,985	30	145,155	2,561	152,977
1976	111	83	6,159	29	56,967	30,328	93,566
1977	47	40	16,436	50	230,215	37,102	283,843
1978	25	206	9,623	34	13,059	14,007	36,929
1979[1]		592	3,049	55	38,558	5,713	47,967
1980[1]		2	2,699	146	147,243	6,555	156,645
10-year Average		175	6,573	78	81,926	16,207	104,959

Continued

Table 27. Continued.

Year	Peak Effort	Catch by Species					Total
		King	Sockeye	Coho	Pink	Chum	
		Combined Gear					
1971	201	421	45,514	447	68,883	52,829	168,094
1972	142	67	134,628	296	5,961	18,503	159,455
1973	233	184	77,282	255	130,246	84,714	292,681
1974	257	348	99,883	125	152,417	59,148	311,921
1975	356	771	147,849	389	244,647	34,999	428,653
1976	340	185	60,493	101	110,186	119,498	290,463
1977	254	164	170,778	99	563,074	164,578	898,693
1978	445	675	203,522	98	62,586	124,686	391,567
1979[1]		1,138	78,706	1,845	298,020	62,570	442,279
1980[1]		198	57,378	1,174	505,210	72,776	626,736
10-year Average		415	107,603	483	214,123	79,430	402,054

[1] Preliminary

Table 28. Salmon escapement by species, Coghill District, 1971-80.

Year	Sockeye[1]	Pink[2]	Chum[2]
1971	15,000	526,950	15,450
1972	16,392	24,050	25,890
1973	13,281	561,200	78,810
1974	22,333	42,660	39,700
1975	34,855	570,950	7,100
1976	9,056	50,930	35,750
1977	31,562	387,310	41,640
1978	42,284	75,270	13,550
1979	48,281	66,230	13,150
1980	142,253	182,430	12,610
10 Year Average	37,530	248,798	28,365

[1] Coghill River only. Aerial count in 1971. Weir-tower estimates during 1972-73. Total weir count after 1974.

[2] District totals include the west side of Port Wells.

Table 29. Coghill River weir salmon counts, 1980.

Date	Sockeye		Pink		Chum		King	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/ 7	2							
8	3	5						
9	2	7						
10	-1/	7						
11	-1/	7						
12	-1/	7						
13	0	7						
14	0	7						
15	1	8						
16	2	10						
17	1	11						
18	0	11						
19	7	18						
20	0	18						
21	11	29						
22	220	249						
23	2,632	2,881						
24	6,311	9,192						
25	6,930	16,122						
26	5,841	21,963						
27	3,824	25,787						
28	6,217	32,004			2			
29	7,137	39,141	5		2	4		
30	5,886	52,033	0	5	2	6		
7/ 1	7,006	52,033	4	9	0	6		
2	9,340	61,373	2	11	7	13	1	
3	11,626	72,999	0	11	7	20	0	1
4	9,545	82,544	4	15	0	20	0	1
5	7,014	89,558	8	23	1	21	0	1
6	6,455	96,013	3	26	0	21	0	1
7	5,684	101,697	11	37	59	80	0	1
8	5,279	106,976	3	40	156	236	1	2
9	5,451	112,427	3	43	142	378	0	2
10	4,197	116,624	3	46	79	457	0	2
11	5,305	121,929	12	58	153	610	0	2
12	4,639	126,568	27	85	160	770	0	2
13	4,630	130,928	20	105	30	800	0	2
14	2,426	133,354	11	116	10	810	0	2
15	2,297	135,651	10	126	19	829	0	2
16	1,432	137,083	18	144	11	840	0	2
17	1,307	138,390	73	217	9	849	0	2
18	1,063	139,453	167	384	8	857	0	2
19	1,276	140,729	325	709	11	868	0	2

continued

Table 29, (continued)

Date	Sockeye Daily	Sockeye Cum.	Pink Daily	Pink Cum.	Chum Daily	Chum Cum.	King Daily	King Cum.
7/20	665	141,395	358	1,067	14	882	1	3
21	737	142,131	437	1,504	38	920	1	4
22	122 2/	142,253	48	1,552	2	922	0	4
TOTAL		142,253 3/		1,552		922		4

1/ Weir not in operation due to ice.

2/ Additional 400 sockeye salmon estimated below the weir when the weir was removed for the season.

3/ Total includes 6,082 jacks which amounts to 4.3% of the season escapement count.

Table 30. Coghill and Eshamy districts catch and escapement age composition, sockeye salmon, 1980.

District	Age class[1] 1.1[3]	1.2[4]	1.3[5]	2.2[5]	2.3[6]	Total
Cogill						
Catch						
Number	597	34782	15756	5055	1188	57,378
Percent	1.04	60.62	27.46	8.81	2.07	100.00
Escapement						
Number	1366	16587	120430	2504	1366	142,253
Percent	0.96	11.66	84.66	1.76	0.96	100.00
Total						
Number	1963	51369	136186	7559	2554	199.631
Percent	0.98	25.73	68.22	3.79	1.28	100.00
Eshamy						
Catch						
Number			Not sampled			2,661
Percent						
Escapement						
Number	0	43457	0	806	0	44,263
Percent	0.00	98.18	0.00	1.82	0.00	100.00
Total						
Number	0	46070	0	854	0	46,924
Percent	0.00	98.18	0.00	1.82	0.00	100.00

[1] The McCurdy-Randall system of age class notation is to be read as follows: Left hand digit denotes freshwater age, the right hand digit denotes ocean age, and the superscript digit denotes brood year origin. This system incorporates both the European and Gilbert-Rich age class denotations into one convenient notation.

Table 31. Commercial catch of salmon by species, by period, by gear type in the Unakwik district, Prince William Sound, 1980. 1/

Period	Effort 2/	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
			DRIFT GILL NET				
7/14 - 18			1,053		599	114	1,766
7/21 - 25			38		169	35	242
7/28 - 8/1			22	3	1,249	186	1,460
8/ 4 - 8			10		1,083	98	1,191
8/11 - 15			1		521	50	572
Total Gill Net		0	1,124	3	3,621	483	5,231
			PURSE SEINE				
7/21 - 25			422		681	191	1,294
7/28 - 8/1			6		7,413	285	7,704
8/ 4 - 8			1		2,011	116	2,128
Total Purse Seine		0	429	0	10,105	592	11,126
			ALL GEAR				
7/14 - 18			1,053		599	114	1,766
7/21 - 25			460		850	226	1,536
7/28 - 8/1			28	3	8,662	471	9,164
8/ 4 - 8			11		3,094	214	3,319
8/11 - 15			1		521	50	622
Total All Gear		0	1,553	3	13,726	1,075	16,357

1/ The season opened in the Unakwik district on 18 June with weekly fishing periods from 0600 h, Monday until 2100 h, Thursday prior to 1 July and from 0600 h, Monday until 2100 h, Friday after 30 June.

2/ The season opened by regulation on 18 June; however, effort did not develop until the start of the regular weekly period on 14 July following a settlement of fish prices on 13 July.

Table 32. Unakwik District salmon catch by species and gear, 1971-80.

Year	Peak Effort	Catch by Species					Total
		King	Sockeye	Coho	Pink	Chum	
				Drift Gill Net			
1971	6	-	1,470	-	111	216	1,797
1972	13	2	10,010	-	3,445	859	14,316
1973	12	1	8,858	-	119	91	9,069
1974	16	5	10,449	3	10,911	500	21,868
1975	14	4	11,922	-	84	70	12,080
1976	15	4	8,421	-	2,744	331	11,500
1977	16	3	7,912	2	257	141	8,315
1978	22	24	9,116	-	2,082	597	11,819
1979[1]		11	9,250	9	2,359	289	11,918
1980[1]		-	1,124	3	3,621	483	5,231
10-year Average		5	7,853	2	2,573	358	10,791
				Purse Seine			
1971	6	-	38	68	14,207	1,621	15,934
1972				NO FISHING			
1973				NO FISHING			
1974				NO FISHING			
1975				NO FISHING			
1976	4	-	7	-	8,526	225	8,758
1977				NO FISHING			
1978	24	3	268	5	55,115	5,025	60,416
1979[1]				NO FISHING			
1980[1]		-	429	-	10,105	592	11,126
10-year Average		-	74	7	8,795	746	9,623

Table 32, Continued

Year	Effort	Catch by Species					Total
		King	Sockeye	Coho	Pink	Chum	
				Combined Gear			
1971	12	-	1,508	68	14,318	1,837	17,731
1972	13	2	10,010	-	3,445	859	14,316
1973	12	1	8,858	-	119	91	9,069
1974	16	5	10,449	3	10,911	500	21,868
1975	14	4	11,922	-	84	70	12,080
1976	19	4	8,428	-	11,270	556	20,258
1977	16	3	7,912	2	257	141	8,315
1978	46	27	9,384	5	57,197	5,622	72,235
1979[1]		11	9,250	9	2,359	289	11,918
1980[1]		-	1,553	3	13,726	1,075	16,357
10-year Average		6	7,927	9	11,369	1,104	20,415

[1] Preliminary.

Table 33. Commercial catch of salmon by species, by period, by gear type in the Eshamy district, Prince William Sound, 1980. 1/

Period	Effort	Catch by Species					
		King	Sockeye	Coho	Pink	Chum	Total
			DRIFT GILL NET				
8/13 - 15	14		642	22	2,949	130	3,743
8/18 - 22	0						0
8/25 - 29	2		19	3	11		33
TOTAL DRIFT GILL NET		0	661	25	2,960	130	3,776
			SET GILL NET				
8/13 - 15	2		291	7	271	35	604
8/18 - 22	5		1,387	23	1,949	91	3,450
8/25 - 29	2		322	8	151	8	489
TOTAL SET NET		0	2,000	38	2,371	134	4,543
			ALL GEAR				
8/13 - 15	16		933	29	3,220	165	4,347
8/18 - 22	5		1,387	23	1,949	91	3,450
8/25 - 29	4		341	11	162	8	522
TOTAL ALL GEAR		0	2,661	63	5,331	264	8,319

1/ The season was opened by emergency order at 0600 h on Wednesday 13 August and continued until the close of the weekly period at 2100 h on Friday, 5 September. Weekly periods in the Eshamy district are from 0600 h, Monday until 2100 h, Friday.

Table 34. Eshamy District salmon catch by species and gear, 1971-80.

Year	Peak Effort	Catch by Species					TOTAL
		King	Sockeye	Coho	Pink	Chum	
				Drift Gill Net			
1971				C L O S E D			
1972	53	49	15,117	626	20,362	15,663	51,817
1973	42	41	7,470	71	11,777	16,632	35,991
1974	146	18	12,640	114	217,141	23,488	253,401
1975				C L O S E D			
1976				C L O S E D			
1977	53	22	16,916	49	63,036	8,344	88,367
1978				C L O S E D			
1979				C L O S E D			
1980[1]	14	0	661	25	2,960	130	3,776
10-year Average[2]		26	10,561	177	63,055	12,851	86,670
				Set Gill Net			
1971				C L O S E D			
1972	11	33	37,771	520	25,013	10,345	73,682
1973	15	28	8,969	78	9,724	10,914	29,713
1974	10	4	6,394	11	68,300	5,408	80,117
1975				C L O S E D			
1976				C L O S E D			
1977	12	9	9,889	2	24,743	4,218	38,861
1978				C L O S E D			
1979				C L O S E D			
1980[1]	5	0	2,000	38	2,371	134	4,543
10-year Average[2]		15	13,005	130	26,030	6,204	45,383

Table 34, Continued

Year	Peak Effort	Catch by Species					TOTAL
		King	Sockeye	Coho	Pink	Chum	
			Combined Gear				
1971			C L O S E D				
1972	64	82	52,888	1,146	45,375	26,008	125,499
1973	57	69	16,439	149	21,501	27,546	65,704
1974	156	22	19,034	125	285,441	28,896	333,518
1975			C L O S E D				
1976			C L O S E D				
1977	65	31	26,805	51	87,779	12,562	127,228
1978			C L O S E D				
1979			C L O S E D				
1980[1]	19	0	2,661	63	5,331	264	8,319
10-year Average[2]		41	23,566	307	89,085	19,055	132,054

[1] Preliminary.

[2] Only the five years open to fishing during this period were used to calculate averages. The general purse seine season was also closed during 1972 and 1974 and is reflected in the larger catches during those years.

Table 35. Salmon escapement from weir and stream foot survey counts, Eshamy District, 1971-80.[1]

Year	King	Sockeye[2]	Coho	Pink	Chum
1971		954	97	7,800	120
1972		28,683	71	1,510	70
1973		10,202	205	5,390	170
1974		633		6,330	
1975		1,724	41	5,720	440
1976		19,367	125	5,500	
1977		11,746	230	32,080	
1978		12,580	20	5,690	
1979		12,169		12,860	
1980	5	44,263	128	13,813	2
10 Year Average		14,232	92	9,669	80

[1] Number of streams surveyed varies from 3 to 5 for pink and chum salmon, (See Technical Data Report No. 35 and Data Report No. 9).

[2] Weir count.

Table 36. Eshamy River weir salmon counts, 1980. 1/

Date	Sockeye		Pink		King		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/22								
23								
24								
25	1	1						
26	13	14						
27	1	15						
28	0	15						
29	28	43						
30	34	77						
7/ 1	57	134						
2	4,099	4,233			1			
3	1,256	5,489			0	1		
4	398	5,887			0	1		
5	123	6,010			0	1		
6	324	6,334			0	1		
7	1,365	7,699			0	1		
8	913	8,612			0	1		
9	2,189	10,801			1	2		
10	824	11,625			0	2		
11	1,190	12,815			1	3		
12	2,034	14,849	2		0	3		
13	1,057	15,906	2	4	0	3		
14	2,282	18,188	10	14	0	3	1	
15	1,864	20,052	6	20	0	3	0	1
16	1,282	21,334	4	24	1	4	0	1
17	1,328	22,662	3	27	0	4	0	1
18	69	22,731	0	27	0	4	0	1
19	449	23,180	2	29	0	4	0	1
20	435	23,615	1	30	0	4	0	1
21	555	24,170	6	36	0	4	0	1
22	162	24,332	2	38	0	4	0	1
23	83	24,415	1	39	0	4	0	1
24	164	24,579	6	45	0	4	0	1
25	311	24,890	14	59	0	4	0	1
26	150	25,040	2	61	0	4	0	1
27	222	25,262	5	66	0	4	0	1
28	50	25,312	1	67	0	4	0	1
29	24	25,336	0	67	0	4	0	1
30	1,173	26,509	61	128	0	4	0	1
31	517	27,026	39	167	0	4	0	1
8/ 1	979	28,005	68	235	0	4	0	1
2	14	28,019	3	238	0	4	0	1
3	980	28,999	9	247	0	4	0	1
4	1,027	30,026	18	265	0	4	0	1
5	420	30,446	7	272	0	4	0	1
6	72	30,518	6	278	0	4	0	1

continued

Table 36. (continued)

Date	Sockeye		Pink		King		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/ 7	280	30,798	22	300	0	4	0	1
8	875	31,673	23	323	0	4	0	1
9	229	31,902	11	334	0	4	0	1
10	2,442	34,344	166	500	0	4	2	3
11	1,389	35,733	46	546	0	4	0	3
12	398	36,131	16	562	0	4	1	4
13	1,412	37,543	70	632	0	4	6	10
14	854	38,397	30	662	0	4	0	10
15	445	38,842	17	679	0	4	2	12
16	994	39,836	33	712	0	4	8	20
17	762	40,598	68	780	0	4	2	22
18	354	40,952	13	793	0	4	7	29
19	304	41,256	13	806	0	4	14	43
20	145	41,401	11	817	0	4	9	52
21	224	41,625	15	832	0	4	4	56
22	256	41,881	7	839	0	4	13	69
23	189	42,070	26	865	1	5	8	77
24	534	42,604	23	888	0	5	7	84
25	505	43,109	22	910	0	5	5	89
26	277	43,386	6	916	0	5	0	89
27	143	43,529	5	921	0	5	7	96
28	272	43,801	23	944	0	5	10	106
29	86	43,887	3	947	0	5	0	106
30	103	43,990	4	951	0	5	1	107
31	230	44,220	9	960	0	5	15	122
9/ 1	43	44,263	3	963	0	5	6	128
TOTAL		44,263[2/]		963		5		128

1/ Season counts also included two chum salmon (one observed on 25 August and another on 30 August).

2/ Includes 18 jacks.

Table 37. Aerial survey estimates of sac roe herring, Prince William Sound, 1980.

Date	Area or District	No. Schools Sm.	Med.	Lg.	X Lg.	Estimated Tonnage *
4/ 5	North Montague Island	9	7	15	10	20,000
5	Hawkins Island	3	5	8		3,030
6	North Montague Island		schools scattered intense fishing			no estimate
6	Hawkins Island	6	5	3		1,010
8	North Montague Island	10	13	32		11,820
9	North Montague Island	12	17	56		20,400
10	Hawkins Island	4	4			200
14	Montague Island	2	2			100
14	Port Fidalgo & Valdez Arm	41	43	19		8,780
15	" " " "	62	47	49		24,550
16	" " " "	57	40	47		18,620
17	" " " "	60	60	37		15,950
18	" " " "	39	25	4		2,790
19	" " " "	24	9	5		1,350
20	" " " "	9	9	7		2,900
24	" " " "	17	20	6		3,070
28	" " " "	6	5	1		610
30	" " " "	26	15	8		3,660

* Estimated tonnage based upon school size:

Small - up to 50 feet in diameter = 10 tons

Medium - 50 feet to 100 feet in diameter = 40 tons

Large - 100 feet and over in diameter = 350 tons

Table 38. Summary, aerial observations of sac roe herring, season high counts in Prince William Sound, 1974 - 1980.

Date	Area or District	Number Schools Observed Sm.	Med.	Lg.	Estimated Tonnage *	
1974						
4/19	Valdez Arm	100	45	92	35,000	
18	Green Island	1	4	10	3,670	
24	Montague District	3	4	15	5,440	
1975						
4/23	Columbia Bay	24	24		1,200	
1976						
4/14	Valdez Arm	5	7	20	7,830	
1977						
4/18	Valdez Arm	18	22	35	13,290	
		extra large schools			3,500	16,790
1978						
4/17	Valdez Arm	128	34	13	7,230	
5/ 3	Valdez Arm	47	21	20	8,310	
6/12	Valdez Arm and Long Bay	150	42	6	5,280	some juvenil
1979						
4/18	Eastern District	40	34	46	17,860	
20	Valdez Arm	21	13	26	9,830	
28	Montague District	10	5	2	1,000	
28	Hinchinbrook Island	18	6	2	1,120	
1980						
4/ 9	Montague District	12	17	56	20,400	
15	Port Fidalgo and Valdez Arm	62	47	49	24,550	

* Estimated tonnage based upon school size:

Small - up to 50 feet in diameter = 10 tons

Medium - 50 feet to 100 feet in diameter = 40 tons

Large - 100 feet and over in diameter = 350 tons

Table 39. Herring sac roe and spawn on kelp harvested in Prince William Sound, 1969 - 1980.

Year	Sac Roe					Spawn on Kelp		Herring[1] Utilized (MT)	Total Utilization (MT)
	Effort Seines	Harvest (MT)	Effort Gill Nets	Harvest (MT)	Total Harvest (MT)	Effort	Harvest (MT)		
1969	6	322.6			322.6	3	2.4	18.9	341.5
1970						29	86.3	681.7	681.7
1971	12	833.8			833.8	34	348.9	2756.3	3590.1
1972	16	1607.8			1607.8	397	271.8	2147.2	3755
1973	28	6335.1			6335.1	176	138.9	1097.3	7432.4
1974	72	5776.1	3	3.48	5779.6	166	250.4	1978.2	7757.8
1975	76	5516.1			5516.1	437	415.9	3285.6	8801.7
1976[2]	66	2344.2			2344.2	357	219.9	1737.2	4081.4
1977[3]	60	2070.7	1	1.42	2072.1	164	189.1	1493.9	3566
1978	75	1206	38	56	1262	66	63.9	504.8	1766.8
1979	89	3753.8			3753.8	198	214.6	1695.3	5449.1
1980	74	5481.4[4]	16	239.87	5721.3	469	277.7	2193.8	7915.1

1 Equivalent weight of herring utilized calculated from 10% roe recovery and 79% weight of eggs to kelp.
2 No sac roe fishery in the Northern district.
3 No sac roe fishery in the Montague district.
4 350 - 500 tons dead loss.

Table 40. Herring for bait and food harvested in Prince William Sound, in metric tons, 1967 - 1980.[1]

Year	Seine Effort	Seine Harvest MT	Pair Trawl Effort	Pair Trawl Harvest MT	Mid-water Trawl Effort	Mid-water Trawl Harvest MT	Otter Trawl Effort	Otter Trawl Harvest MT	Total MT
1967[2]		27.2							27.2
1970	1	9.1							9.1
1971	2	18.1							18.1
1972	1	4.4							4.4
1973	1	7.7							7.7
Season									
1977-78	2	15.4	2	131.8	1	82			147.2
1978-79[3]	2	177.2	2	896.9	1	93.6	1	2.3	1156.1
1979-80[4]	1	463.4	2	131.6					691
1980-81[5]	3	934.7	3	250.1					1184.8

1 No harvest in years not listed.
2 No effort data available.
3 Fishery opened by emergency order on 10/16/79 and extended on 1/7/80. Deliveries made through March 2.
4 Fishing season opened by emergency order 9/15, closed 12/31, and reopened by emergency order from 2/16-28.
5 Fishing season opened by regulation on September 15 and closed by emergency order on 11/7.

Table 41. Age, length, weight composition of the herring sac roe seine fishery, Eastern District, 1980.

Age Group	Year Class	Males Frequency Number	Males Frequency %	Males Means Length mm	Males Means Weight grams	Females Frequency Number	Females Frequency %	Females Means Length mm	Females Means Weight grams	Combined Sexes Frequency Percent
II	1978					1	1.0	150.0	42.0	.5
III	1977	16	16.0	179.3	77.8	13	13.3	182.7	85.4	14.7
IV	1976	83	83.0	188.4	99.2	74	75.5	189.7	101.6	79.3
V	1975	1	1.0	207.0	134.0	9	9.2	196.7	113.3	5.1
VI	1974					1	1.0	224.0	157.0	.5
Total Number		100				98				
Average Length				188.5				189.5		
Average Weight					96.2				102.8	

Sex Composition: Males - 50.5%
Females - 49.5%

Table 42. Age, length, weight composition of the herring sac roe seine fishery, Montague Island District, 1980.

Age Group	Year Class	Males Frequency Number	Males Frequency %	Males Means Length mm	Males Means Weight grams	Females Frequency Number	Females Frequency %	Females Means Length mm	Females Means Weight grams	Combined Sexes Frequency Percent
III	1977	28	15.6	178.0	75.8	9	6.3	179.9	79.9	11.5
IV	1976	132	73.6	191.3	93.5	110	76.9	192.6	100.5	75.2
V	1975	16	8.9	198.0	108.3	21	14.7	218.0	107.7	11.5
VI	1974	2	1.1	202.0	124.0	1	.7	235.0	189.0	.9
VII	1973	1	.6	228.0	140.0	2	1.4	218.5	143.0	.6
Total Number		179				143				
Average Length				190.2				196.1		
Average Weight					93.6				101.5	

Sex Composition: Males - 55.6%
Females - 44.4%

Table 43. Age, length, weight composition of the herring sac roe gill net fishery, Northern District, 1980.

Age Group	Year Class	Males Frequency Number	Males Frequency %	Males Means Length mm	Males Means Weight grams	Females Frequency Number	Females Frequency %	Females Means Length mm	Females Means Weight grams	Combined Sexes Frequency Percent
IV	1976	4	5.7	206.0	130.5	8	15.7	206.1	143.3	9.9
V	1975	8	11.4	214.1	139.3	8	15.7	214.0	132.3	13.2
VI	1974	29	41.4	220.9	140.0	17	33.3	217.2	137.8	38.0
VII	1975	22	31.4	221.2	152.1	13	25.5	223.5	154.2	28.9
VIII	1974	7	10.0	223.4	162.0	3	5.9	226.3	171.0	8.3
IX	1973	0				2	3.9	230.0	179.0	1.7
Total Number		70				51				
Average Length				219.6				217.6		
Average Weight					145.5				143.9	

Sex Composition: Males - 57.9%
Females - 42.1%

Table 44. Age, length, weight composition of herring introduced into herring pounds for the spawn on kelp harvest, 1980.

Age Group	Year Class	Males Frequency Number	Males Frequency %	Males Means Length mm	Males Means Weight* grams	Females Frequency Number	Females Frequency %	Females Means Length mm	Females Means Weight grams	Combined Sexes Frequency Percent
III	1977	3	7.5	168.0	53.7	2	5.9	171.0	56.0	6.8
IV	1976	32	80.0	188.1	82.7	30	88.2	188.8	76.6	83.8
V	975	5	12.5	198.6	85.0	2	5.9	187.0	75.0	9.4
Total Number		40				34				
Average Length				188.0				187.7		
Average Weight					80.8				75.3	

Sex Composition: Males - 54.1%
Females - 45.9%

* Weights not compares - samples taken from spawn out.

Table 45. Age, length, weight and sex composition of bait herring taken with purse seine gear, 1980.[1]

Age Group	Year Class	Males				Females				Sexes Combined	
		Frequency		Mean		Frequency		Mean		Frequency	
		Number	%	Length mm	Weight grams	Number	%	Length mm	Weight grams	Number	%
II	1978	2	2.8	160.5	59.5	6	6.1	171.0	73.2	8	4.7
III	1977	12	16.9	179.0	82.3	39	39.4	170.0	71.4	51	30.0
IV	1976	33	46.5	184.4	89.9	38	38.4	181.0	87.5	71	41.8
V	1975	10	14.1	188.0	97.5	11	11.1	187.3	92.6	21	12.4
VI	1974	9	12.7	180.4	96.0	3	3.0	185.0	92.4	12	7.1
VII	1973	4	5.6	181.3	94.0	2	2.0	188.0	83.3	6	3.5
VIII	1972	1	1.4	187.0	86.0	0				1	.6
Total Number		71				99					
Average Length				181.6				177.0			
Average Weight					89.2				80.7		

Sex Ratio - 41.7% males, 58.2% females.

[1] All samples combined from September 15, 1980 through November 17, 1980.

Table 46. Calendar weeks used in reporting catch statistics in 1980.

Weeks	From	Through	Weeks	From	Through
1	Jan. 1	5	29	13	19
2	6	12	30	20	26
3	13	19	31	27	Aug. 2
4	20	26	32	Aug. 3	9
5	27	Feb. 2	33	10	16
6	Feb. 3	9	34	17	23
7	10	16	35	24	30
8	17	23	36	31	Sep. 6
9	24	Mar. 1	37	Sep. 7	13
10	Mar. 2	8	38	14	20
11	9	15	39	21	27
12	16	22	40	28	Oct. 4
13	23	29	41	Oct. 5	11
14	30	Apr. 5	42	12	18
15	Apr. 6	12	43	19	25
16	13	19	44	26	Nov. 1
17	20	26	45	Nov. 2	8
18	27	May 3	46	9	15
19	May 4	10	47	16	22
20	11	17	48	23	29
21	18	24	49	30	Dec. 6
22	25	31	50	Dec. 7	13
23	Jun. 1	7	51	14	20
24	8	14	52	21	27
			53	28	31
25	15	21			
26	22	28			
27	29	Jul. 5			
28	Jul. 6	12			

Table 47. Average price paid per pound for salmon, shellfish and miscellaneous fish in the Prince William Sound Area, 1980.

SALMON

King	Sockeye	Coho[1]	Pink[2]	Chum
$1.40	$ .85	$ .39296 - $ .95	$ .39296	$. 50

SHELLFISH

King Crab	Dungeness Crab	Tanner Crab	Shrimp		Razor Clams (Bait)
			Trawl	Pot	
$ .85	$ .40	$ .555	$ .22 - $ .29	$3.00 - $5.00	$ .75 - $1.00

MISCELLANEOUS FISH

Herring Sac Roe	Herring Spawn on Kelp	Herring (Bait)	Halibut	Bottom Fish (Bait)	Octopus (Bait)
$ .1625	$1.09[3]	$ .15	$1.00	$ .35 - $ .40	$ .50

[1] The settlement price reached for coho salmon caught in Prince William Sound was $ .39296 and $ .95 for Copper River and Bering River.

[2] A final price settlement will be made based on the average wholesale price per case between August 1, 1980 and December 31, 1980.

[3] Based on average price of $ .85 for sieve kelp (40% of production) and $1.25 for ribbon kelp (60% of production).

TABLE 48. Average price paid to fishermen for salmon and herring in Prince William Sound, 1977-80[1].

Species	1977	1978	1979	1980[5]
King salmon	$ 1.40	$ 1.39	$ 1.62	$ 1.40
Sockeye salmon	.97	1.23	1.40	.85
Coho salmon				
Copper-Bering Rivers	.70	1.10	1.10	.95
Prince William Sound	.37	.39	.39	.39
Pink salmon	.3575[2]	.3701[3]	.3777[4]	.39296[6]
Chum salmon	.3992[2]	.4258	.53	.50
Herring				
Sac Roe	-	.363	.625	.1625
Bait	-	.189	.15	.15
Spawn on Kelp	-	1.247	1.74	1.09[7]

[1] Source: Processors Annual Reports. Prices are per pound unless indicated otherwise.

[2] The sliding scale percentage paid after sale of the pack was .0167 for pinks and .0281 for chums.

[3] The pink salmon egg recovery adjustment paid was .007 percent.

[4] The pink salmon egg recovery adjustment paid for $.07275 per pound.

[5] Preliminary.

[6] A final price settlement will be based on the average wholesale price per case between August 1, 1980 and December 31, 1980.

[7] Based on average price of $.85 for sieve kelp (40% of production) and $1.25 for ribbon kelp (60% of production).

Table 49. Average weight in pounds of salmon in commercial catches from the Prince William Sound Area, 1971-80.[1]

Year	King	Sockeye	Coho	Pink	Chum
		COPPER RIVER - BERING RIVER			
1971	27.4	6.5	9.3	3.8	5.4
1972	30.1	6.1	8.4	4.2	6.7
1973	32.3	6.9	9.4	4.3	6.7
1974	33.4	6.8	9.1	4.7	7.9
1975	27.8	6.6	9.3	5.3	6.0
1976	28.4	6.8	10.2	4.3	7.4
1977	28.4	7.3	10.6	4.6	7.3
1978	27.3	6.2	9.3	4.2	7.0
1979	27.3	7.0	9.1	4.4	7.8
1980[3]	28.0	7.0	9.7	5.0	7.9
10 Year Average	29.0	6.7	9.4	4.5	7.0
		PRINCE WILLIAM SOUND			
1971	9.5	7.0	7.8	3.6	7.2
1972[2]	13.1	7.4	8.4	4.5	8.9
1973	12.1	7.5	7.0	4.0	9.5
1974[2]	13.3	7.3	8.2	4.7	9.0
1975	11.2	7.6	7.9	3.6	7.2
1976	11.5	7.4	8.4	4.2	9.1
1977	15.1	7.9	8.1	4.4	9.0
1978	12.3	8.1	8.5	3.6	8.5
1979	10.9	7.0	6.8	3.6	8.9
1980[3]	10.0	7.4	9.0	3.4	8.0
10 Year Average	10.7	7.5	8.0	4.0	8.5

[1] Data from Alaska Department of Fish and Game Commercial Fisheries Statistical Leaflets in 1974-75 while all other years are from fish ticket data. Data from Prince William Sound includes all districts and gear types.

[2] General purse seine season closed.

[3] Preliminary.

Table 50. Prince William Sound Area case pack and pounds of frozen salmon by species, by week, 1980.[1]

	King		Sockeye		Coho		Pink		Chum	
Week	Frozen	Cases	Frozen	Cases	Frozen	Cases	Frozen	Cases	Frozen	Cases
21	39078	54	265							
22	66780	52	165	4						
23	54819	34	2944							
24	15447	29	726	1						
25			-1462	24						
26				7649[2]				588[2]		1744[2]
27		2[2]		8224[2]				629[2]		1024[2]
28		16[2]		18877[2]		36[2]		265[2]		1929[2]
29		16	120049	7797		261	7250	51793	68368	10276
30		5	66736	1711		233	37897	77004	98230	8408
31		7	87949	1122	2453	259	30681	88692	123484	8173
32			27340	809	18297	518	1063	87768	76251	6132
33			40647	327	99380	796		52049	55926	1851
34			1690	171	202278	956		24253	10177	3276
35					112329			1312	1100	
36					117957					
37					96045					
38					117499					
39					99655					
TOTAL	176124	215	347049	46716	865893	3059	76891	384353	433536	42813

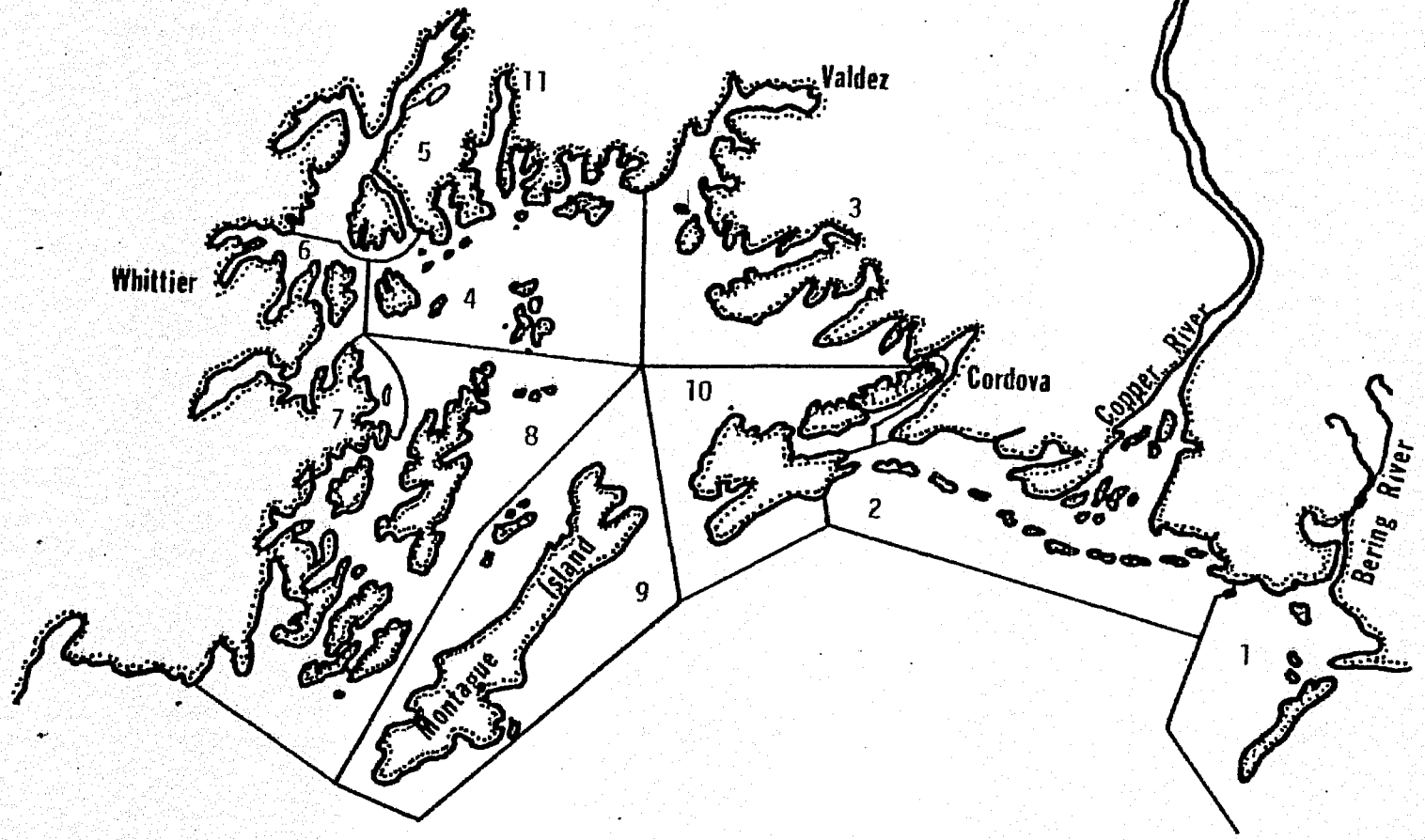
[1] From weekly reports of processors. Frozen salmon reported in processed weight, and cases on a basis of 48 one pound cans.

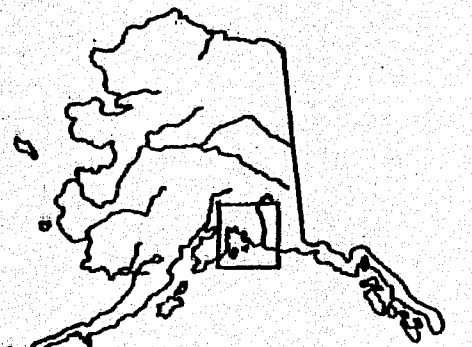
[2] From fish imported from other areas.

Table 51. Prince William Sound Area case pack and pounds of frozen salmon by species, 1972 - 1980.[1]

	King		Sockeye		Coho		Pink		Chums	
Year	Frozen	Cases	Frozen	Cases	Frozen	Cases	Frozen	Cases	Frozen	Cases
1972	839638	177	40736	81632	672305	5523	23586	3102	19673	5684
1973	611482	164	222978	40850	1293847	6053	39584	73635	292380	59284
1974	408662	1507	62725	68576	2620	14127	0	30335	1187	10925
1975	293657	183	553541	24281	564579	1254	0	133358	63154	6266
1976	758172	151	1294110	99436	918509	5564	351944	121762	514854	2302
1977	356567	253	2741166	41860	861761	2420	1232766	178151	931911	38850
1978	581353	139	2518147	15664	1690871	4482	229744	117863	705796	39376
1979	302419	158	1466938	3669	1782175	3970	1769191	474084	305315	24347
1980	176124	215	347049	46716	865893	3059	76891	384353	433536	42813

[1] Case pack on the basis of 48 one pound cans per case. Frozen salmon in round weight 1972 - 77. From 1978 frozen salmon reported in processed weight.





Fishing Districts

1. Bering River
2. Copper River
3. Eastern
4. Northern
5. Coghill
6. Northwestern
7. Eshamy
8. Southwestern
9. Montague
10. Southeastern
11. Unakwik

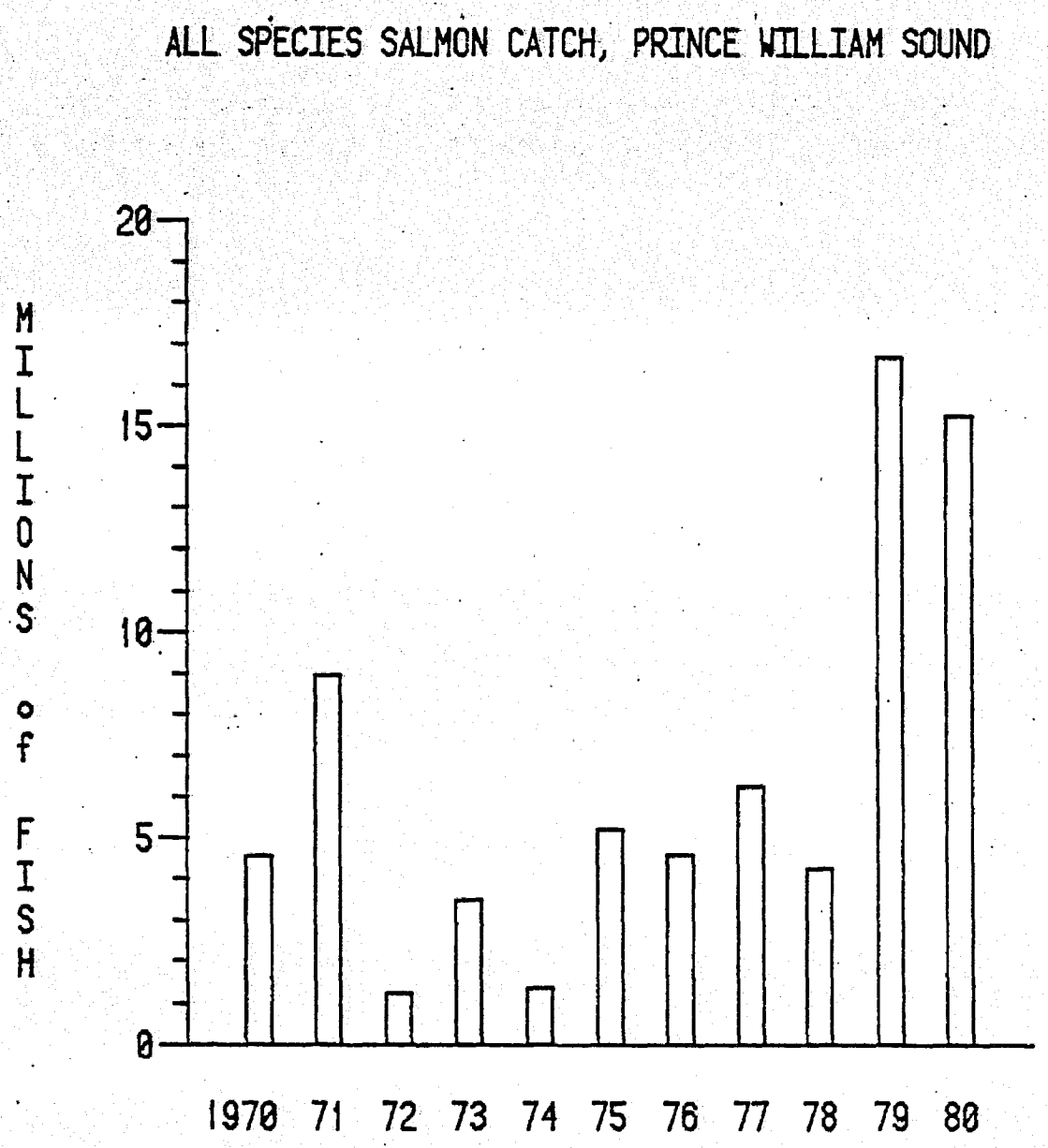


Figure 2. Total salmon catch for all species and districts, Prince William Sound area, 1970-80.

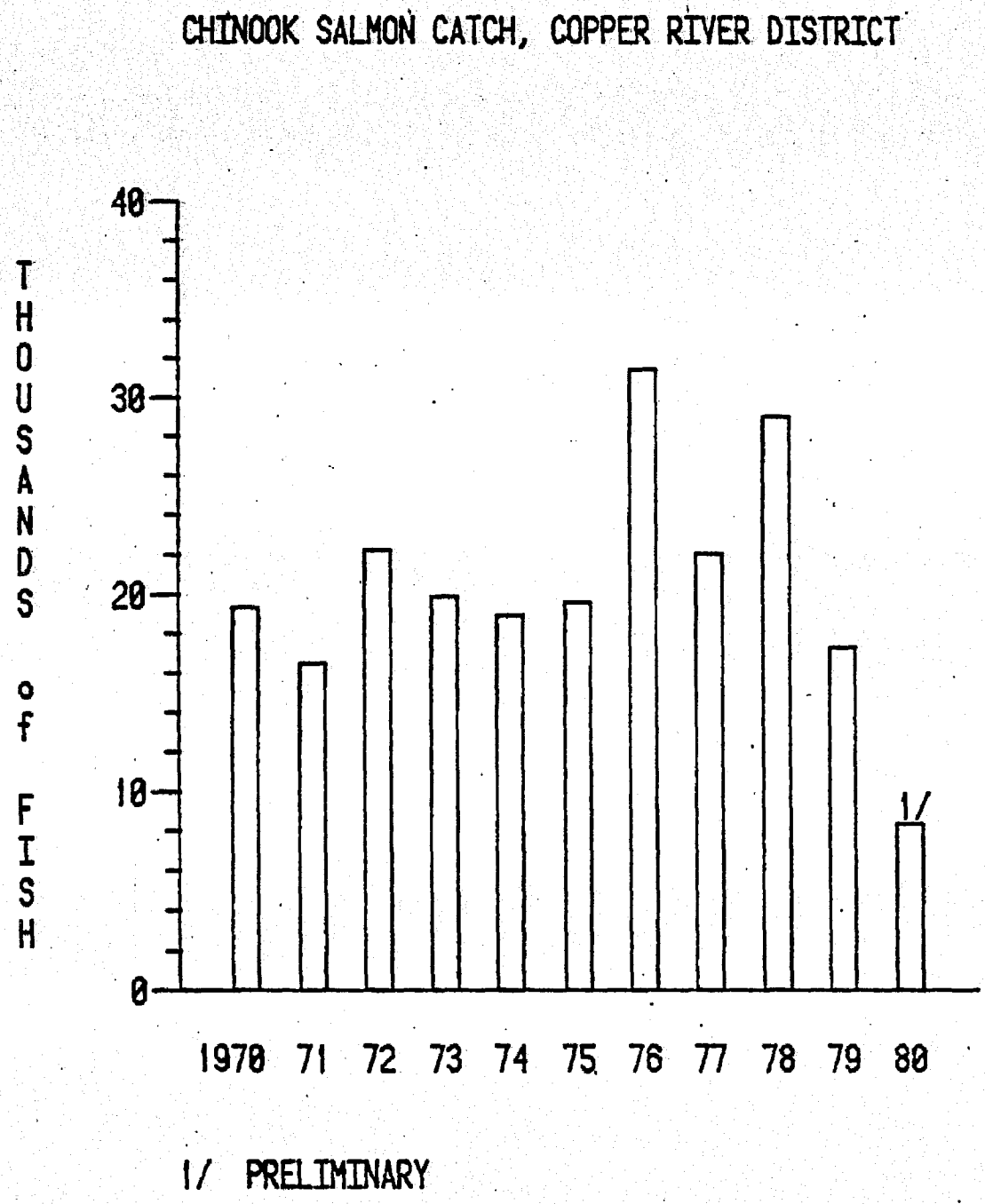


Figure 3. King salmon catches in the Copper River District, 1970-80.

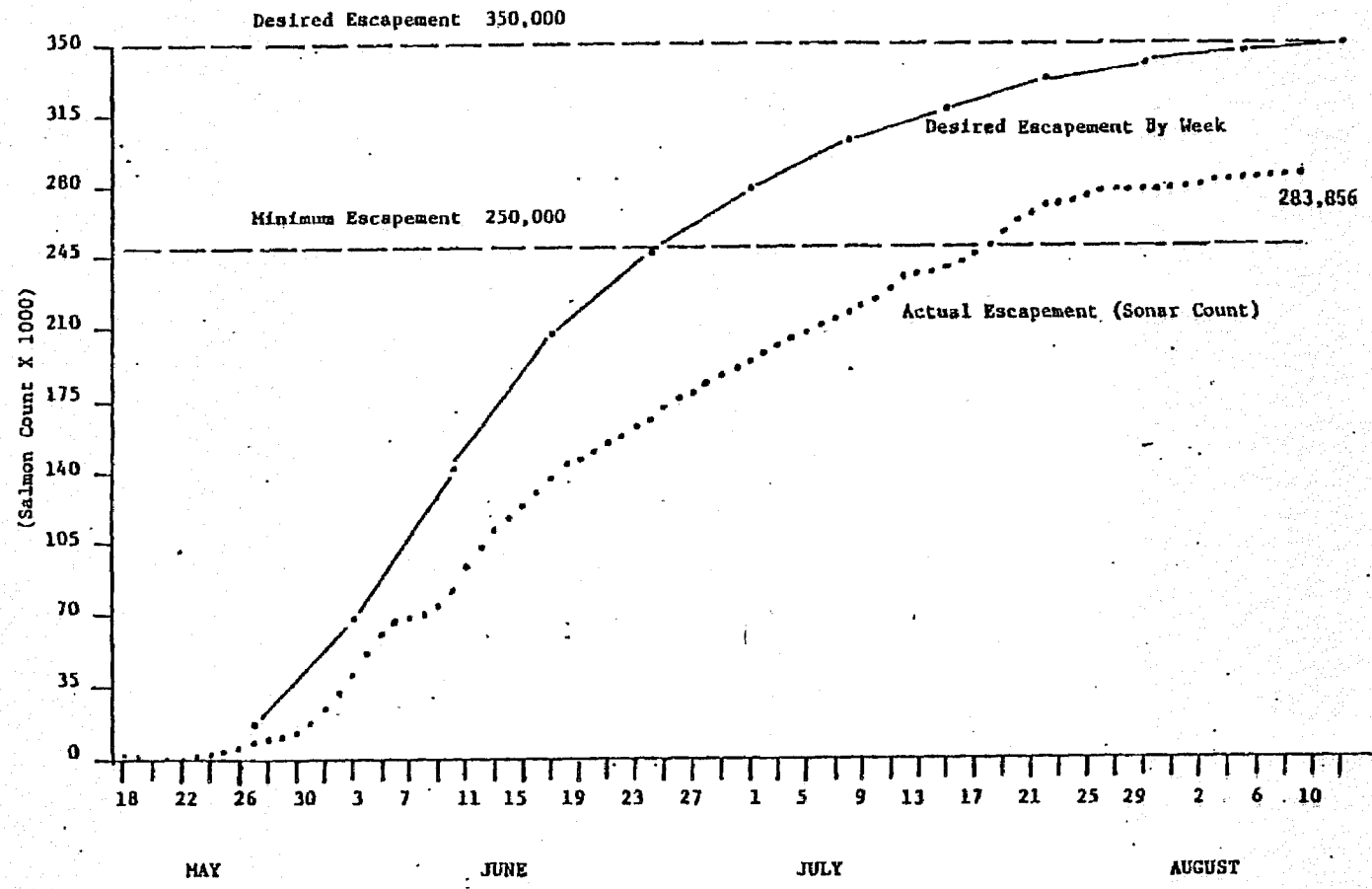


Figure 4. 1980 Copper River Sonar Counts, desired season escapement level, minimum season escapement level and desired sonar escapement level by week.

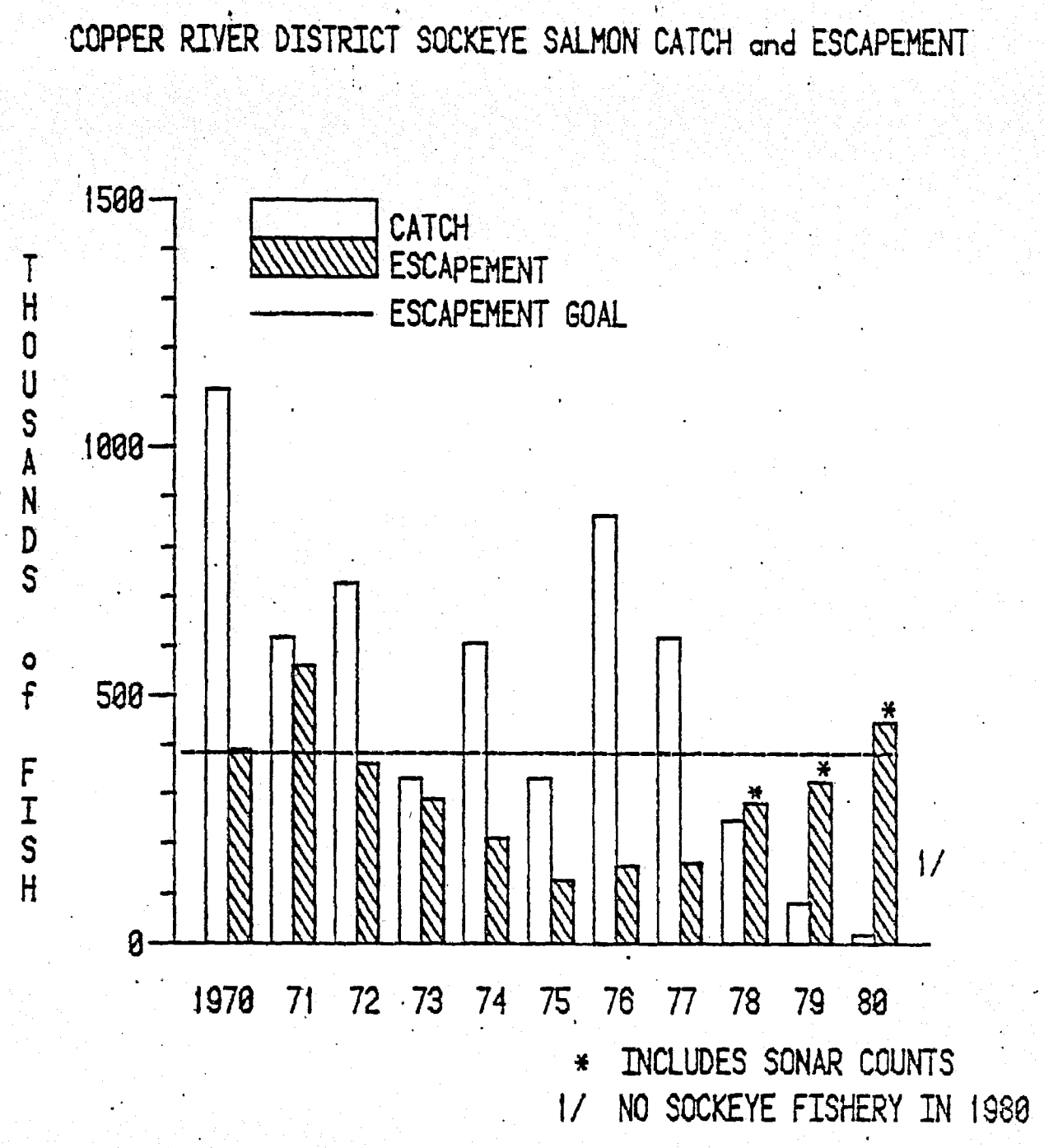


Figure 5. Sockeye salmon catch and escapement in the Copper River District, 1970-80.

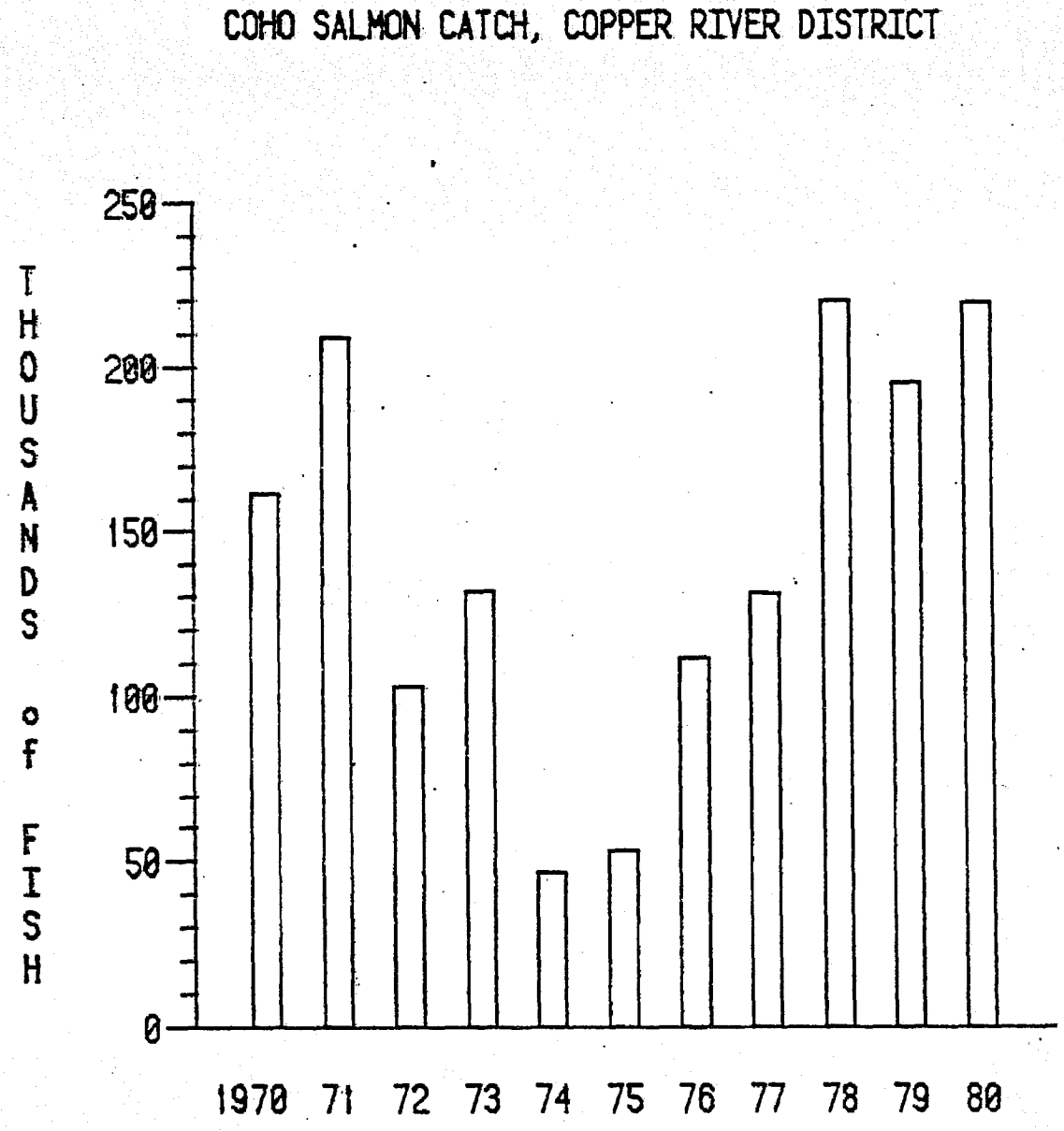


Figure 6. Coho salmon catches in the Copper River District, 1970-80.

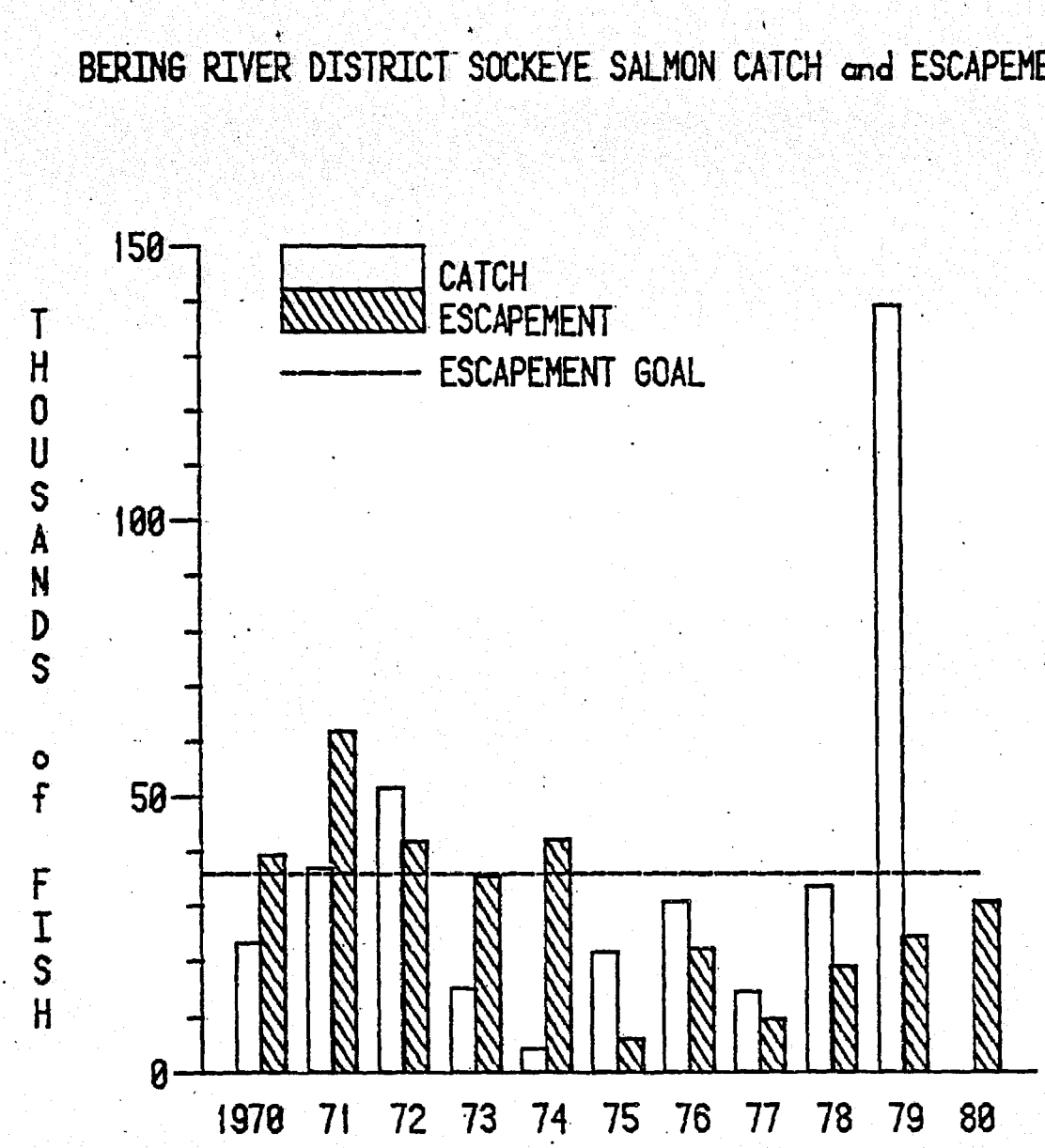


Figure 7. Sockeye salmon catch and escapement in the Bering River District, 1970-80.

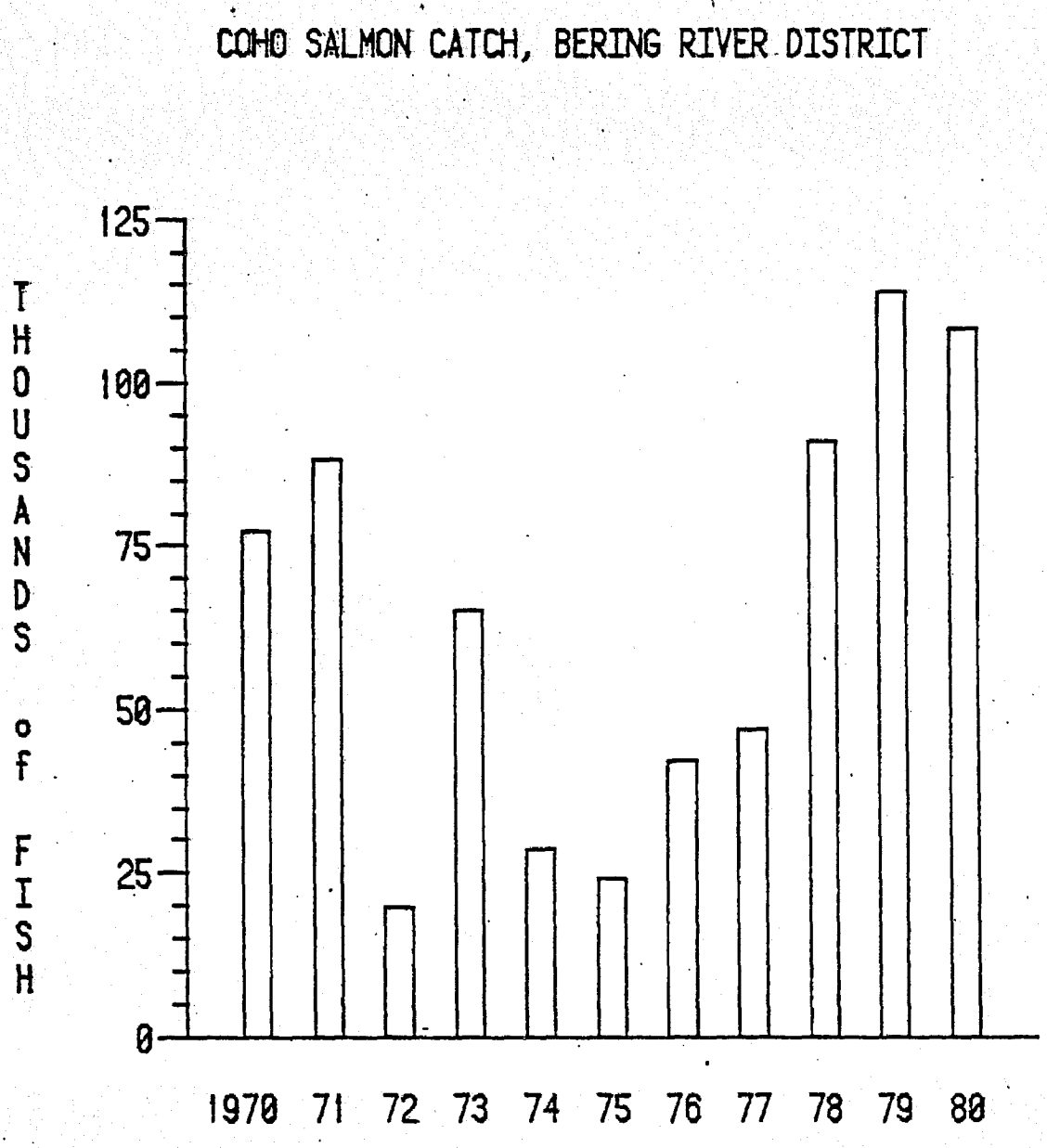


Figure 8. Coho salmon catches in the Bering River District, 1970-80.

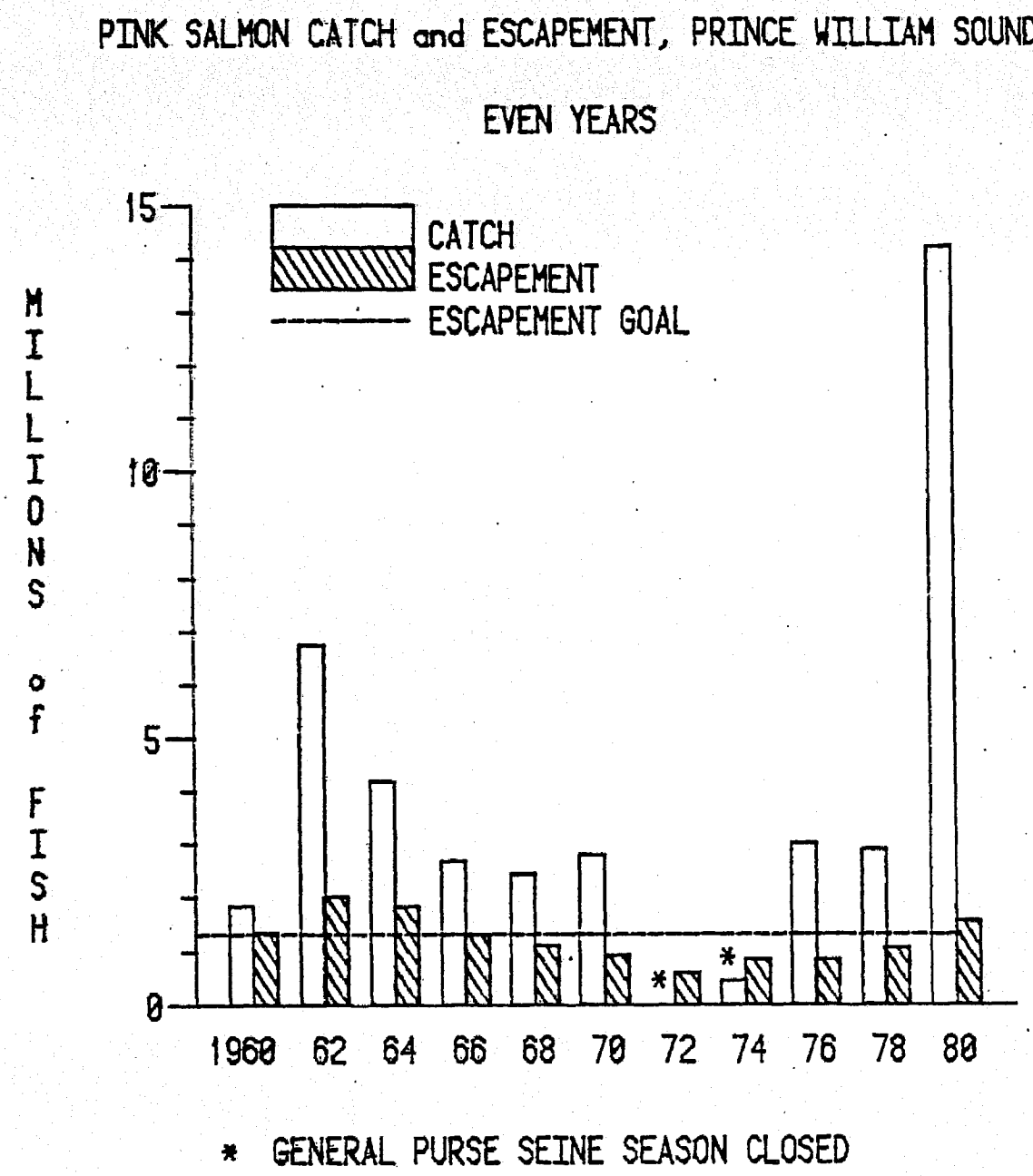


Figure 9. Pink salmon catch and escapement in the Prince William Sound area, even years, 1960-80.

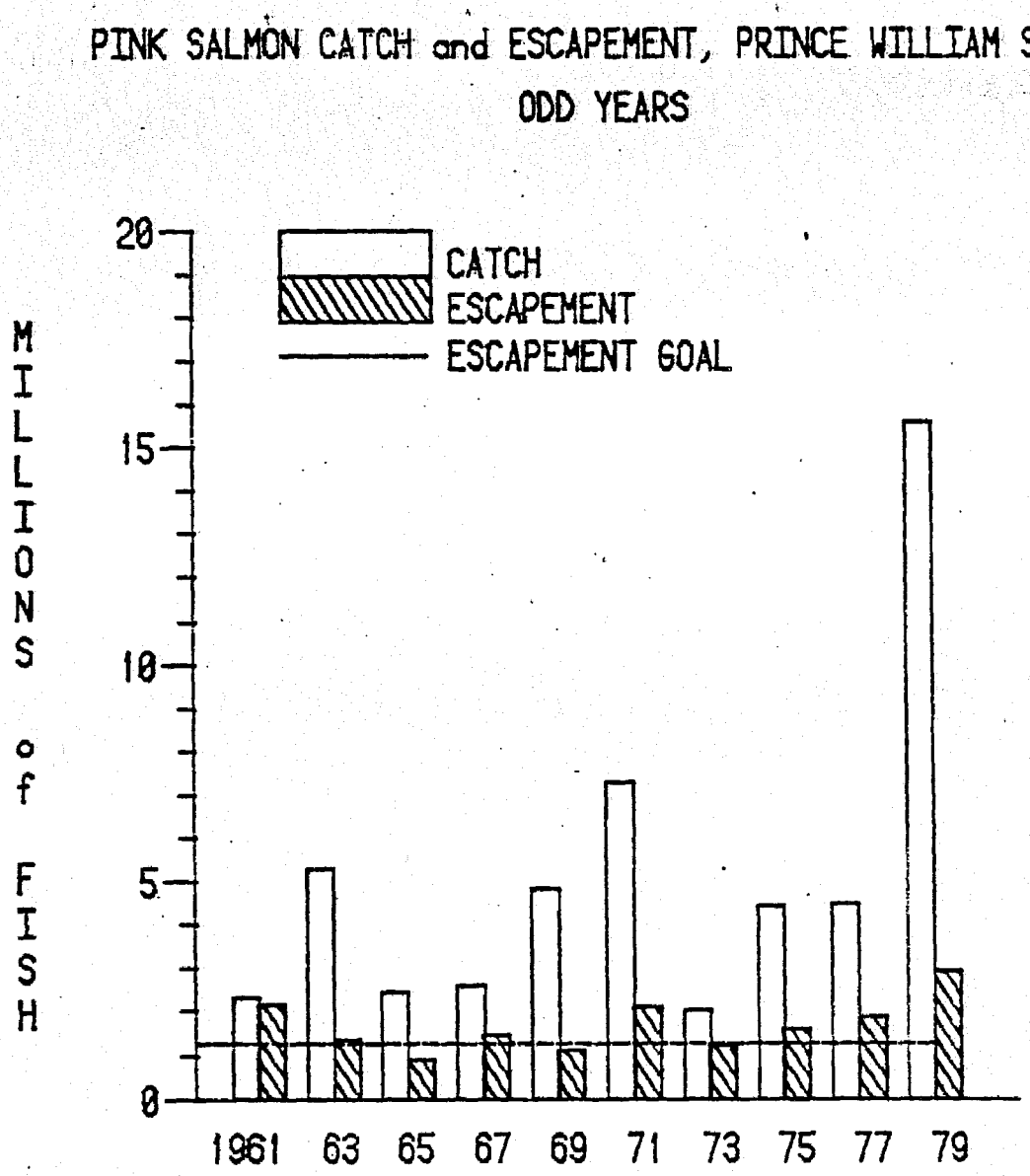


Figure 10. Pink salmon catch and escapement in the Prince William Sound area, odd years, 1961-79.

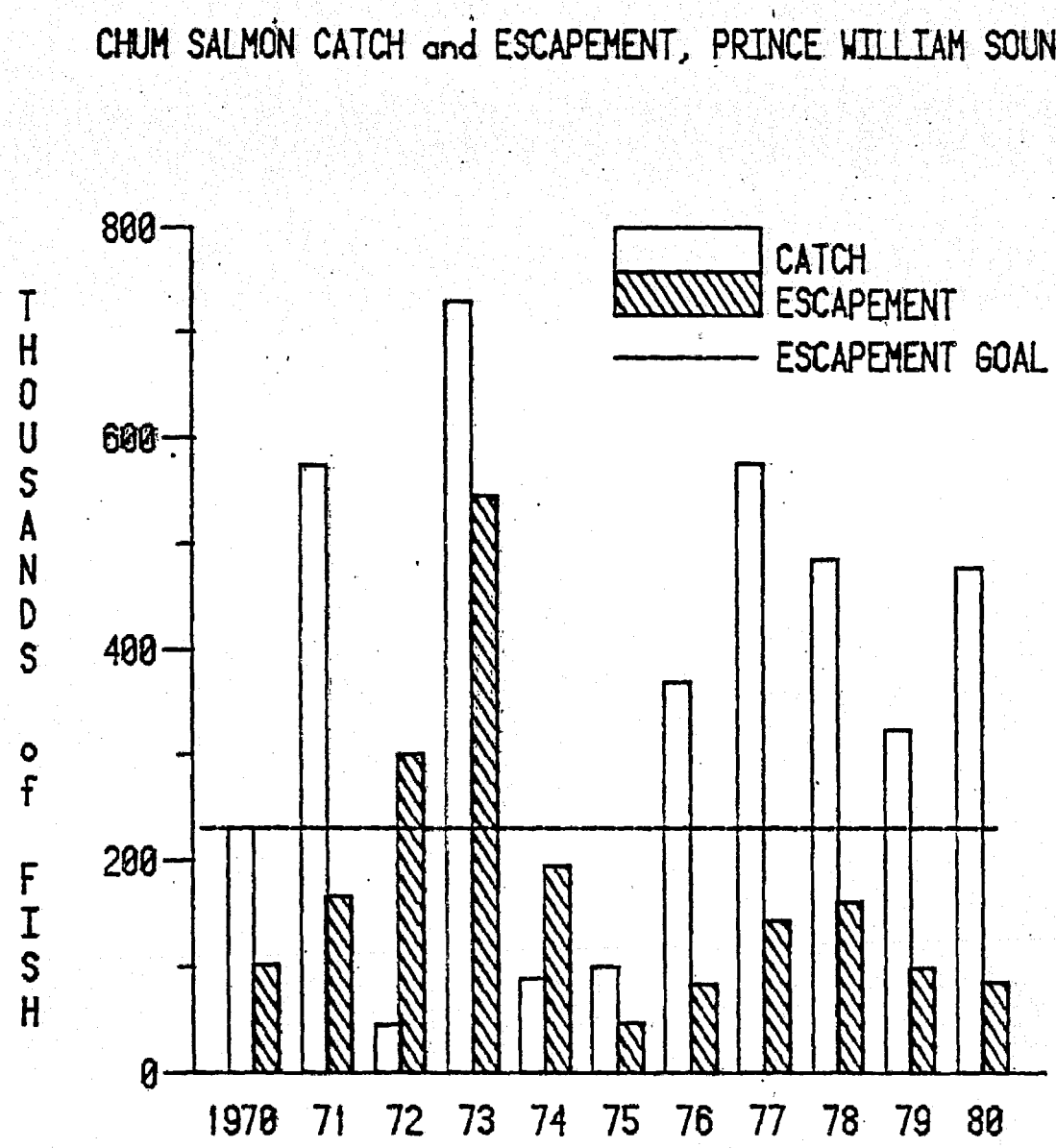


Figure 11. Chum salmon catch and escapement in the Prince William Sound area, 1970-80.

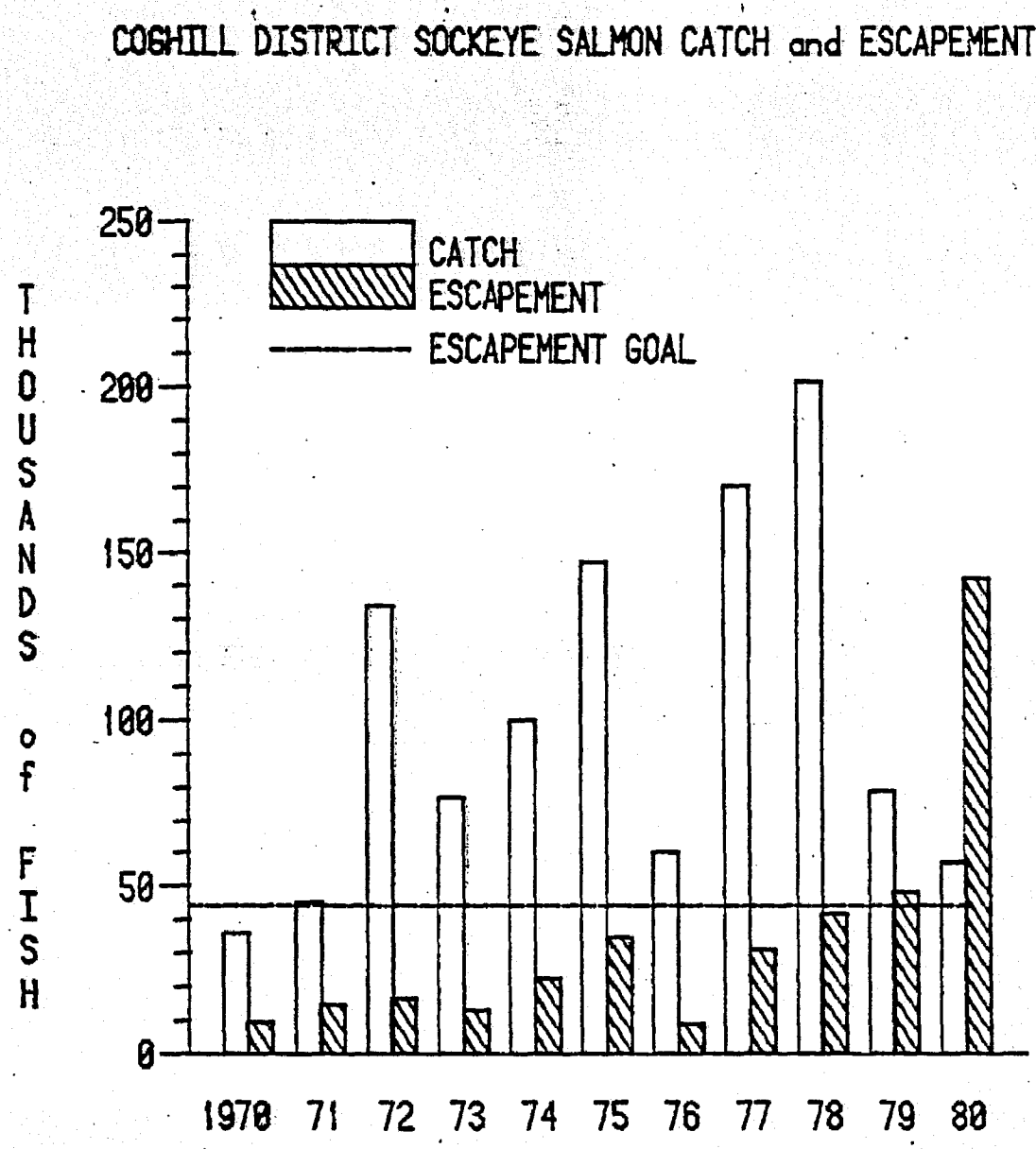


Figure 12. Sockeye salmon catch and escapement in the Coghill District, 1970-80.

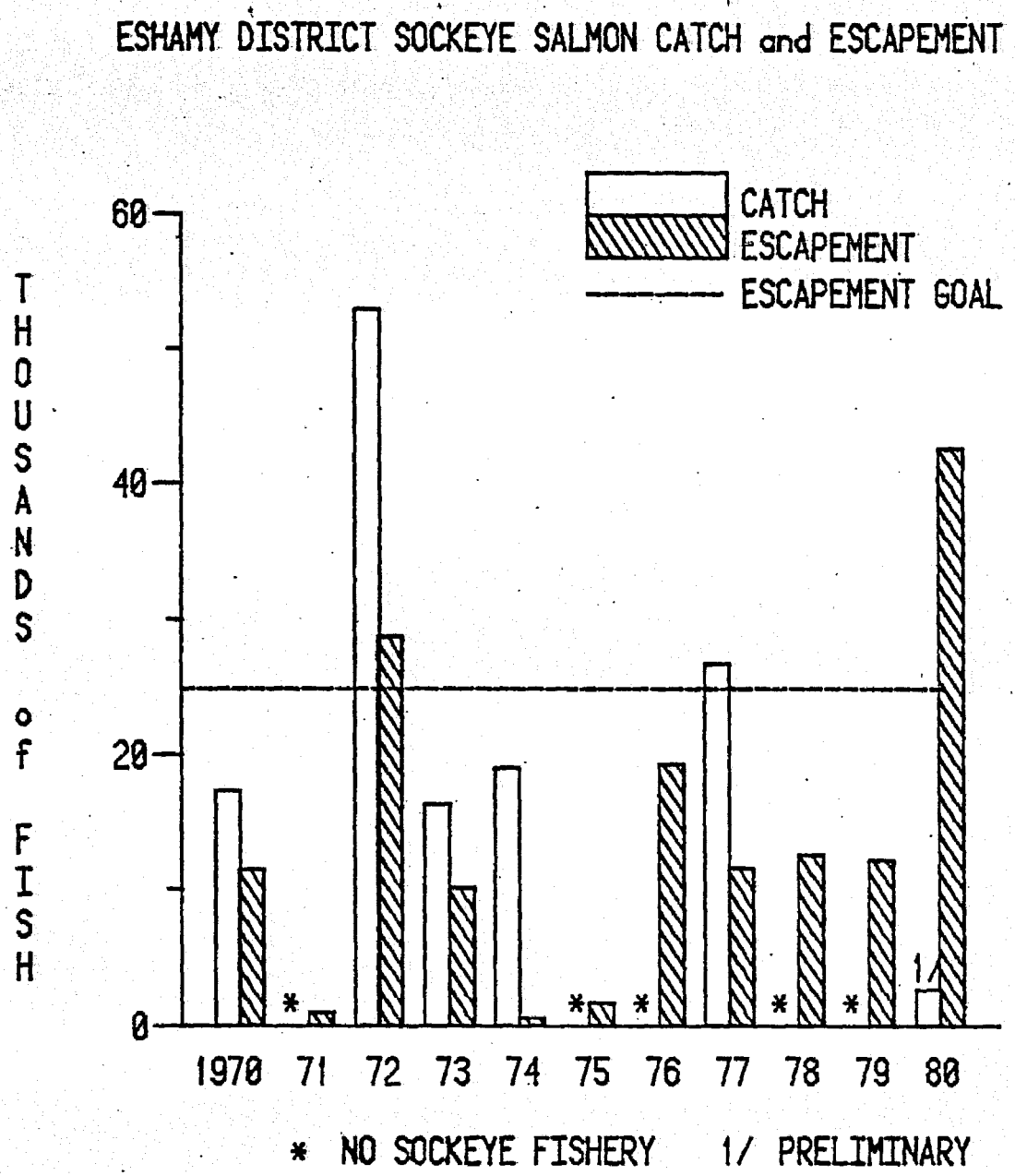


Figure 13. Sockeye salmon catch and escapement in the Eshamy District, 1970-80.

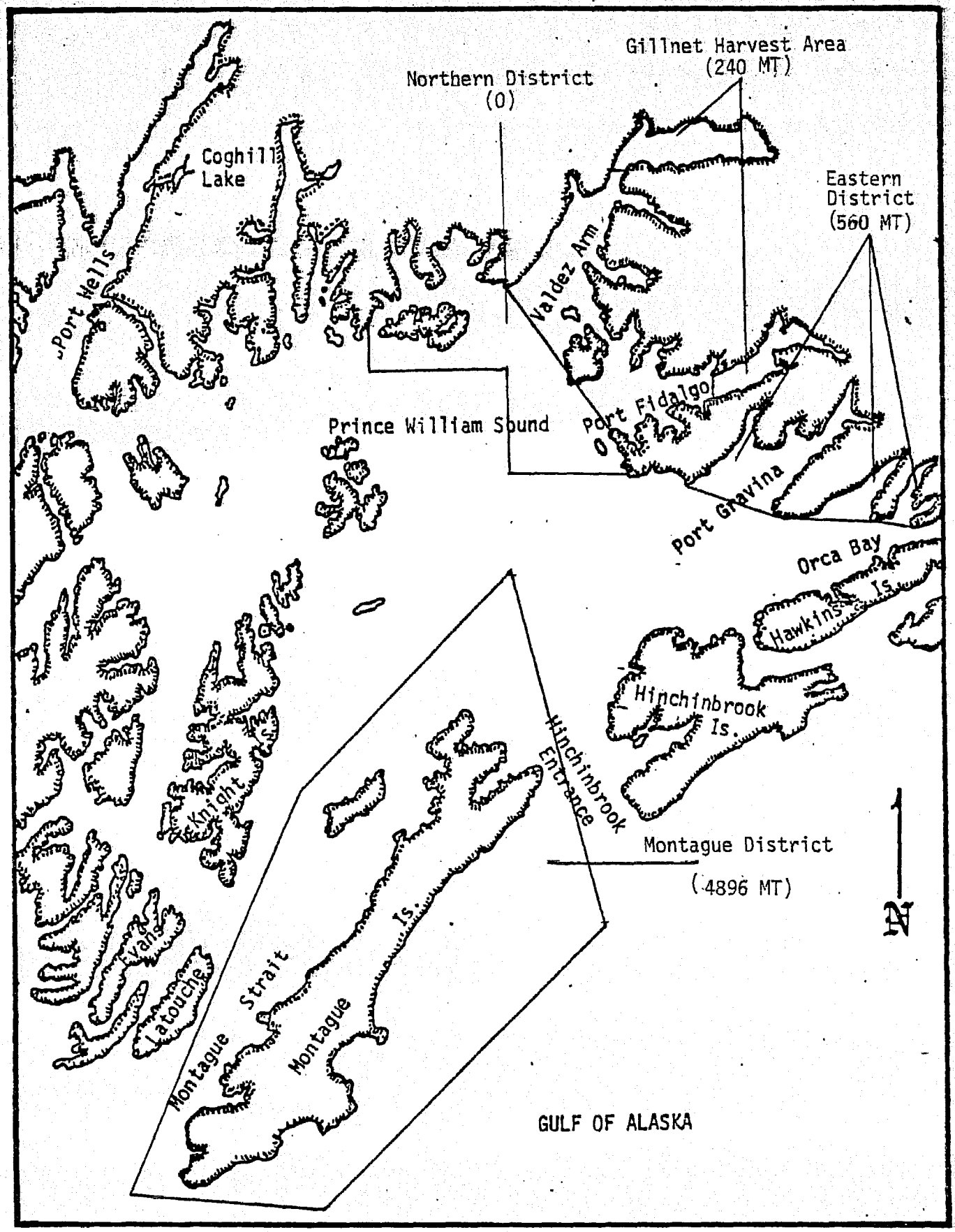


Figure 14. Prince William Sound herring sac roe harvest areas 1980
( ) = Tonnage harvested by district.

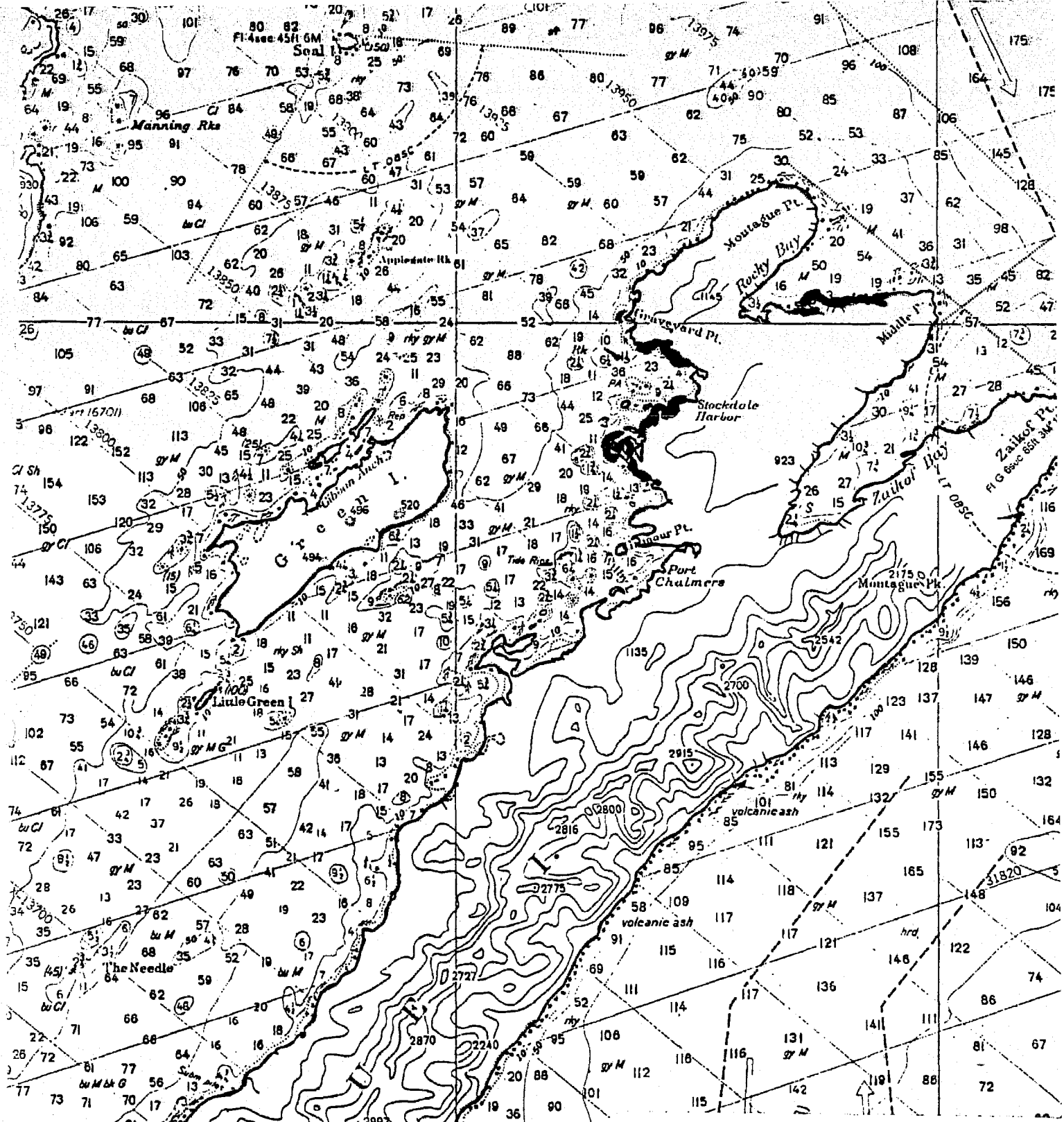


Figure 15. 1980 areas of herring spawning in the Montague District.

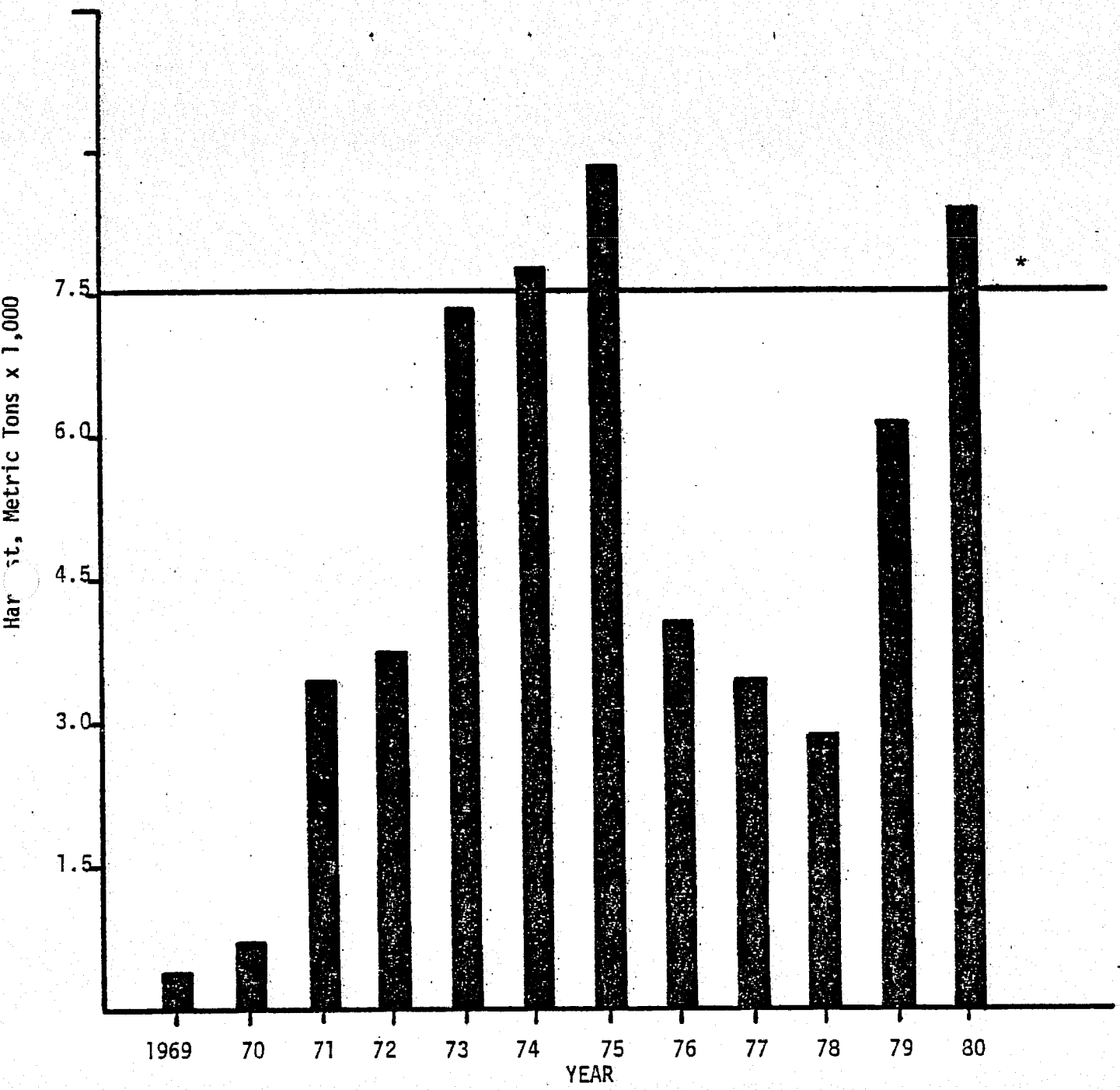


Figure 16. Prince William Sound herring harvest, all fisheries, 1969 - 80.

*Guideline Harvest level

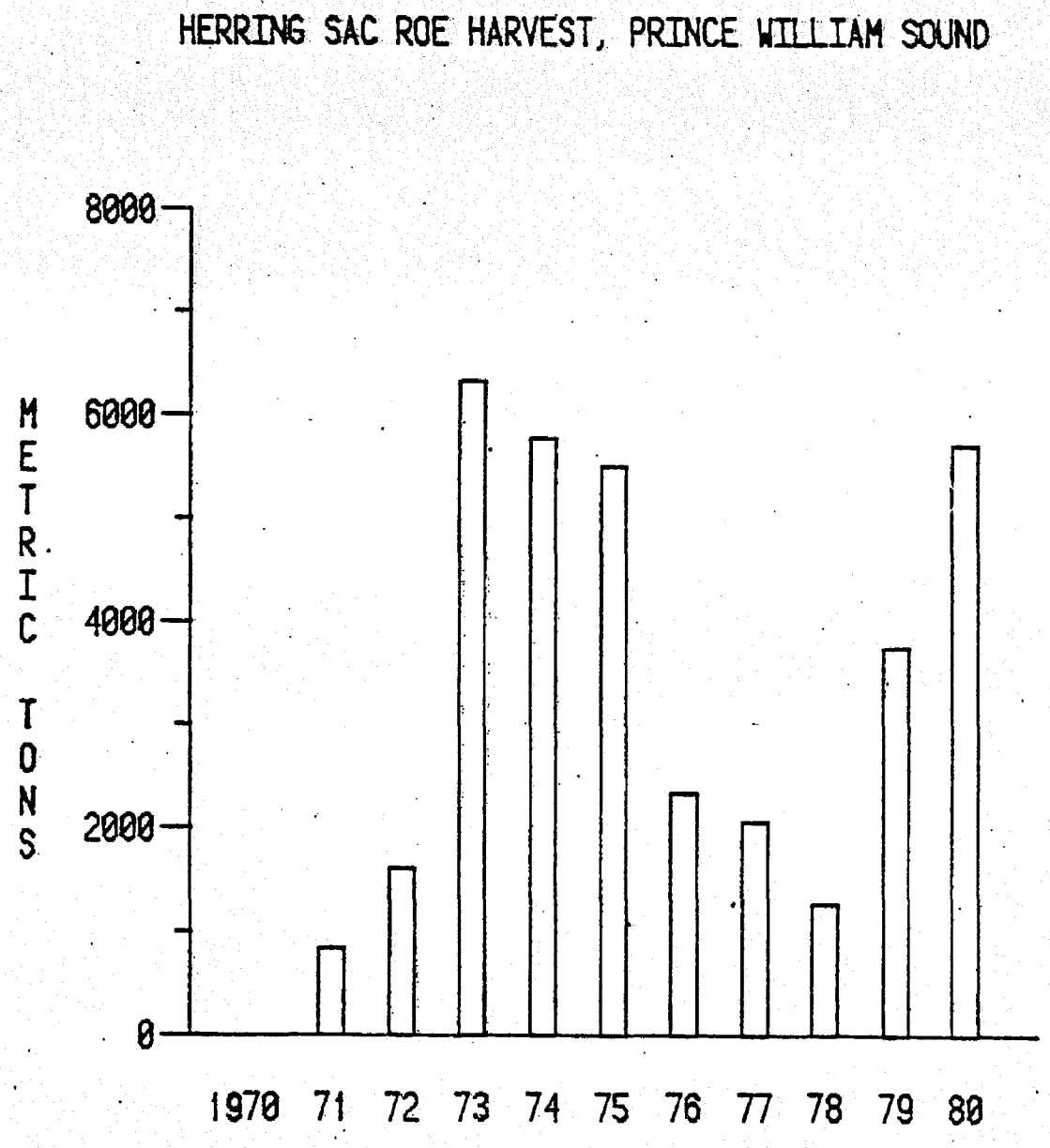


Figure 17. Herring sac roe harvest from Prince William Sound Area, 1970 - 80.

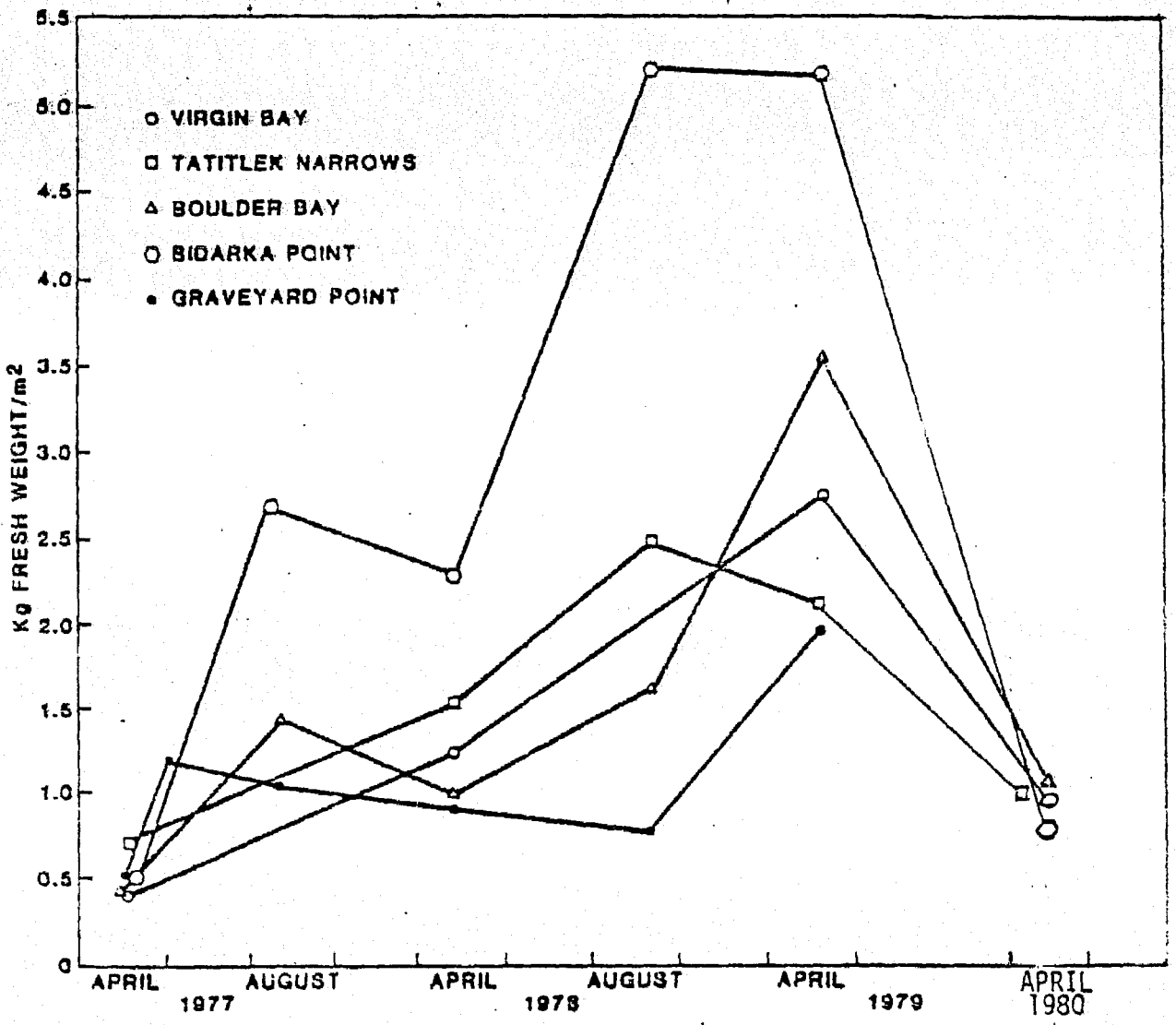


Figure 18. MEAN STANDING CROPS OF KELP AT THE PRIMARY STUDY SITES IN PRINCE WILLIAM SOUND

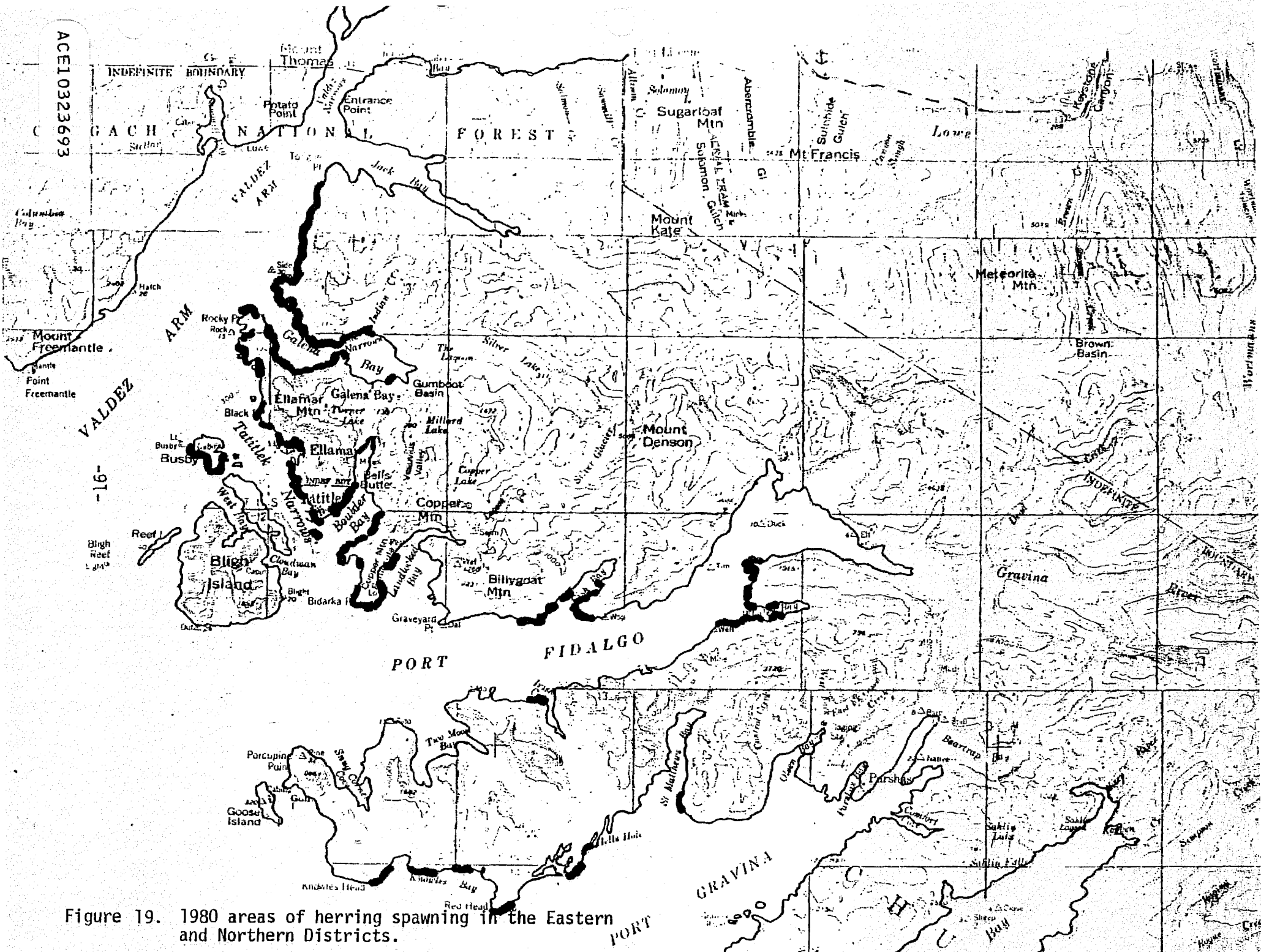


Figure 19. 1980 areas of herring spawning in the Eastern and Northern Districts.

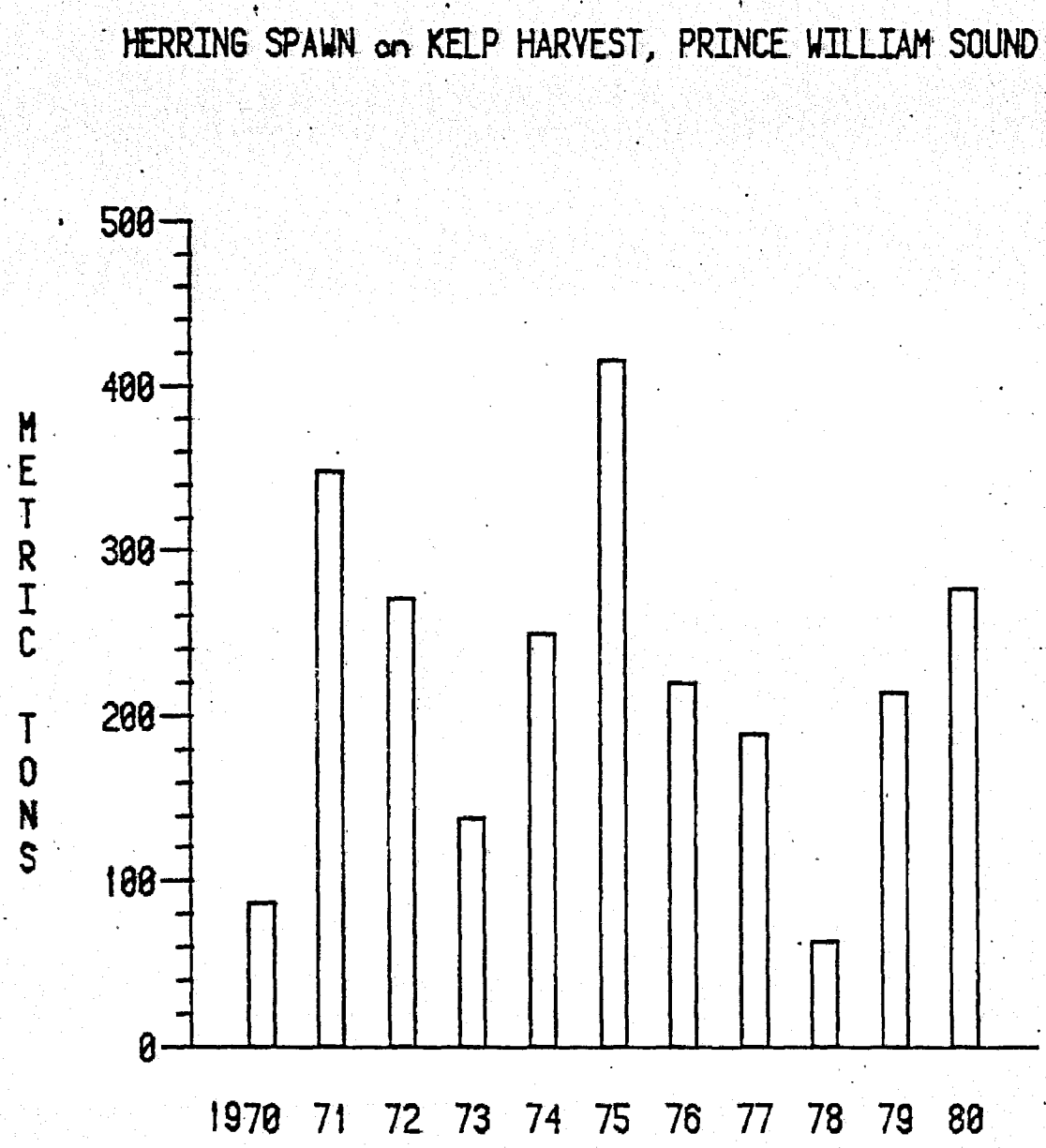


Figure 20. Herring spawn on kelp harvest, Prince William Sound Area, 1970 - 80.

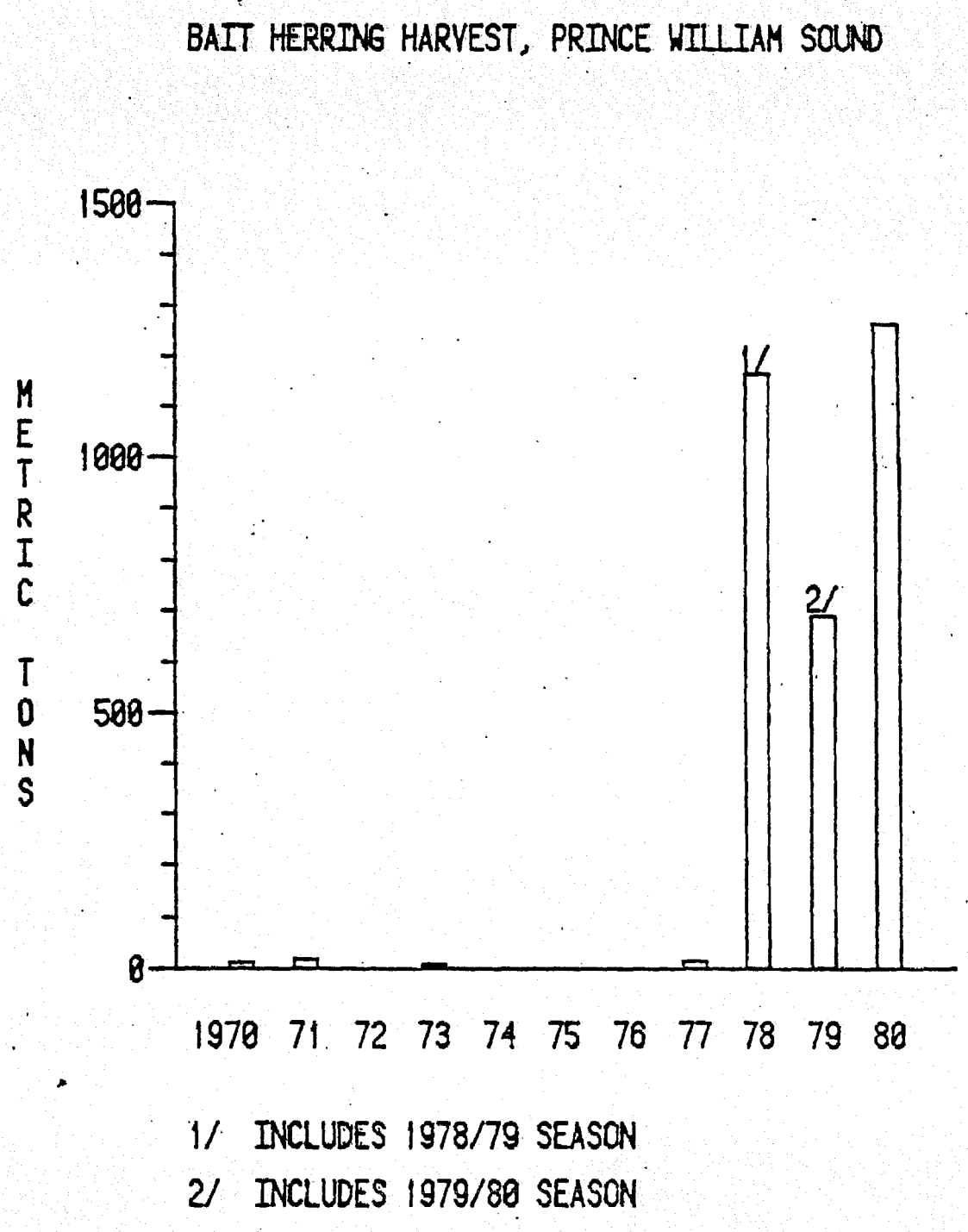
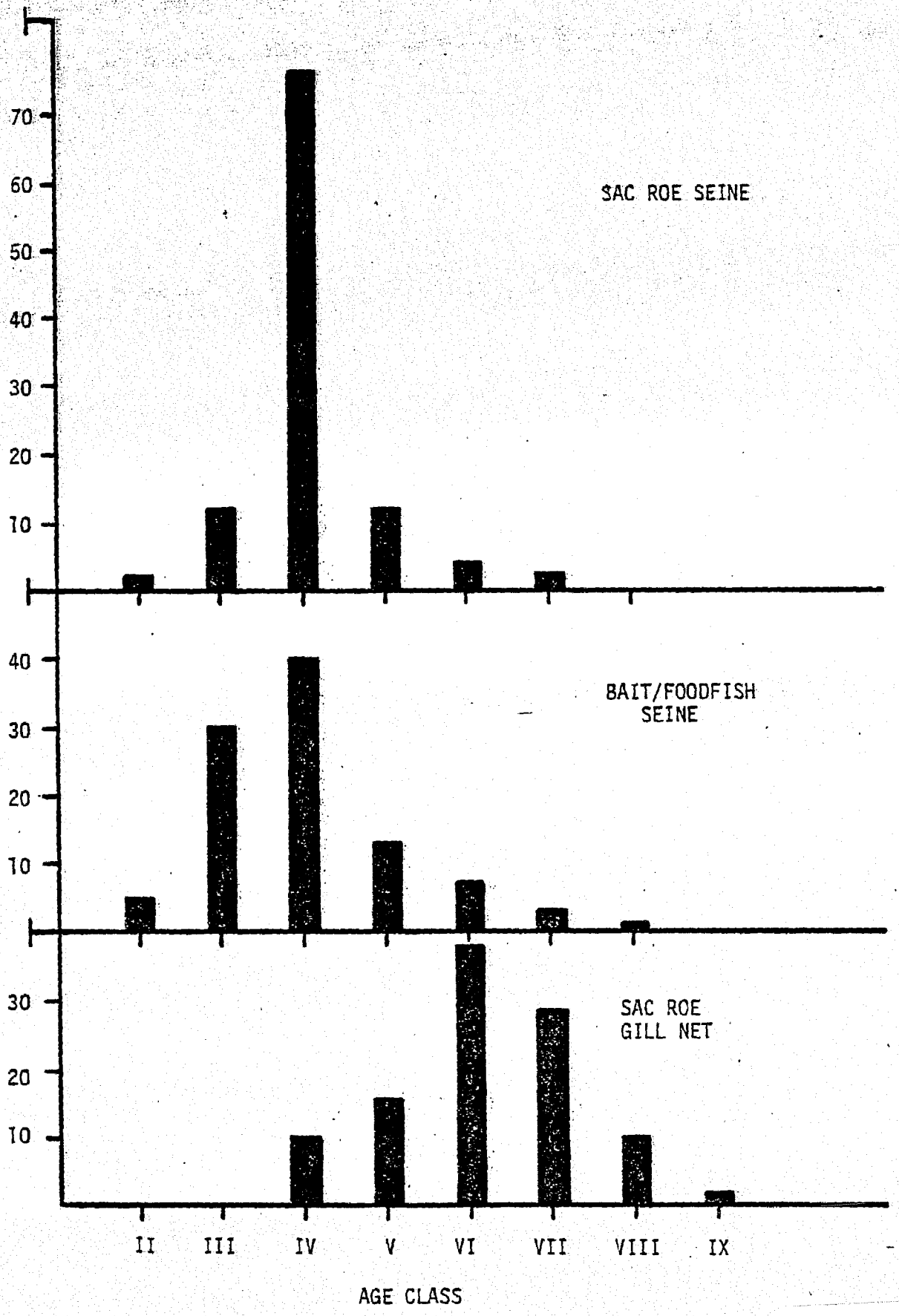


Figure 21. Herring bait harvest, Prince William Sound Area, 1970 - 80.

gillnet and seine fishery, [illegible].

*Percent contribution weighted by fish weight.



ACE10323696

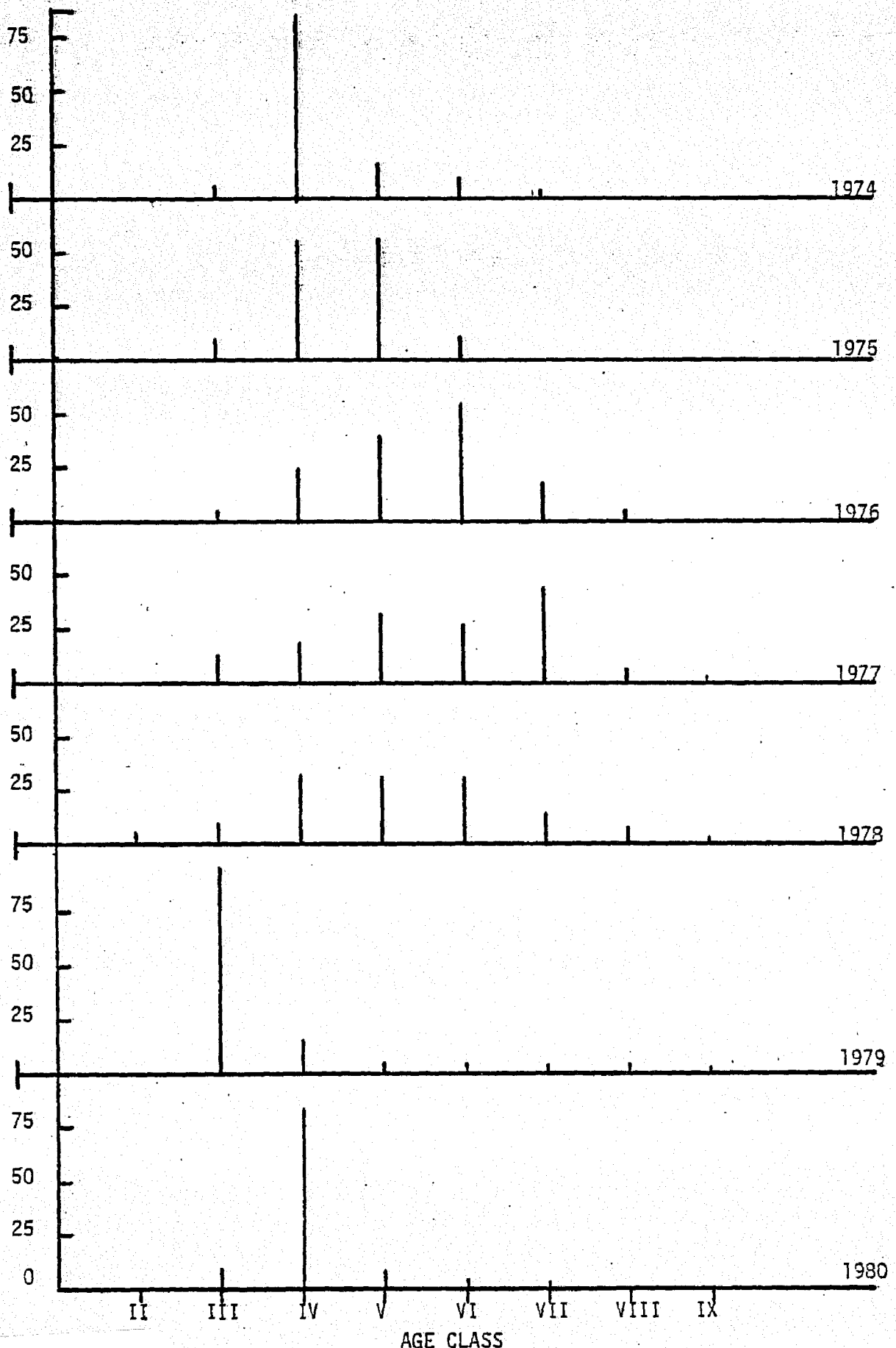


Figure 23. Prince William Sound herring seine sac roe fishery, percent contribution by age class, 1974-1980

ACKNOWLEDGEMENTS

The Commercial Fisheries Division, Finfish Section, Prince William Sound Area, employed 12 permanent employees and 20 permanent/seasonal employees in 1980 who participated in various area management programs.

Thanks is extended to all personel for a successful 1980 fisheries season.

Special acknowledgement is given to Peter J. Fridgen and Michael McCurdy for their contribution in preparation of the contents of this report. Also, to Jeannette Bailey for editorial comments and the task of typing and collating this report.

Following is a list of personnel, general duty assignments and duties of employment.

Permanent Employees

Ralph B. Pirtle	Area Management Biologist, 1/1 - 3/31
Richard B. Randall	Area Management Biologist, 4/1 - 12/31
Peter J. Fridgen	Assistant Area Management Biologist
Michael McCurdy	Research Biologist, Project Leader
Kenneth Roberson	Research Biologist, Project Leader
Keith Webster	Research Biologist, Project Leader 1/1 - 10/15
John M. Jackson	Fisheries Technician V
Kenneth Carrasco	Fisheries Technician III, 1/1 - 6/
Robert Gaylor	Fisheries Technician III, 7/6 - 12/31
Jeannette Bailey	Clerk - Stenographer III
Audrey Dennison	Clerk Typist III, 2/6 - 12/31
Kathy Adler	Clerk Typist III

Permanent/Seasonal Employees

Gary Anderson	Eshamy Weir	6/16 - 9/ 4
Mary Lou Begen	* Glennallen Office	5/27 - 12/24
Ted Callahan	Tag and Recovery Program	7/28 - 9/ 2
Alfred Clayton	Tag and Recovery Program	6/26 - 8/12
Will L. Fancher	* Miles Lake Sonar	5/ 9 - 8/10
Bruce T. Gordon	* Subsistence Fishery	5/31 - 8/15
Ruth M. Gronquist	* Incubation Studies	5/ 5 - 6/30
Ellen Hannan	Coghill Weir	6/ 2 - 8/ 1
Randy B. Hughes	* Subsistence Fishery	5/31 - 7/15
Elizabeth Jackson	Clerk Typist III	10/28 - 12/12
Michael T. Leach	* Incubation Studies	5/12 - 6/30
David A. Miller	* Miles Lake Sonar	5/26 - 8/10
Dennis Moore	Eshamy Weir	6/16 - 9/ 4
Carol Maxwell	Data Control Clerk I	4/ 1 - 12/31
Dale L. Russell	* Miles Lake Sonar	5/ 9 - 7/27
Randall Rust	Coghill Weir & Stream Surveys	6/ 2 - 10/ 3
Keith C. Schultz	* Miles Lake Sonar	5/ 1 - 8/10
	* Stock Separation	11/ 1 - 12/24
Richard A. Smith	* Subsistence Fishery	5/31 - 8/22
Richard Steiner	Tag and Recovery Program	8/13 - 8/18
Kenneth Treb	Tag and Recovery Program	7/28 - 9/ 5

* Projects under Kenneth Roberson's supervision.

Appendix A. A sequential listing of finfish processors, location of operation, size of cans, lines of machinery and type of product processed in 1980.

Name, Executive, Address, Location of Operation	Size of Cans Lines of Machinery	Type of Product
Aguirre, Jose 9931 Tolsona Circle Anchorage, AK 99502		Salmon
Alaska Packers Association [1] Merle Wickett, Supt. P. O. Box 380 Cordova, AK 99574		Salmon
Alaska Coast Fisheries Route 2 Soldotna, AK 99669		Salmon
Alaskan Gourmet, Inc. 1130 W. International Airport Road Anchorage, AK 99502		Salmon
Alaska International Fisheries 9361 Bothwell Circle Anchorage, AK 99502		Salmon
Bayside Cold Storage Fred Pettingill, Supt. P. O. Box 636 Cordova, AK 99574		Salmon Herring Sac Roe Herring Eggs on Kelp
Bergit Fishing Company Stanley Samuelson, Supt. P. O. Box 936 Cordova, AK 99574		Herring Eggs on Kelp
Blake's Canning Company Margaret Blake, Supt. P. O. Box 94 Cordova, AK 99574		Smoked Salmon
Cape Yakataga Fish Company Bela Von Tolmacsy, Supt. P. O. Box 346 Yakutat, AK 99689	1 Line 1/4 lb. hand pack 1/2 lb. hand pack	Smoked Salmon

continued,

Appendix A, continued.

Name, Executive, Address, Location of Operation	Size of Cans Lines of Machinery	Type of Product
Chugach Alaska Fisheries Al O'Leary, Supt. P. O. Box 120 Cordova, AK 99574	1 Line - 1/4 lb. 2 Lines - 1/2 lb. 2 Lines - 1 lb.	Salmon
Cold Water Harvesters 5650 11th Avenue N.E. Seattle, WA 98105		Herring Eggs on Kelp
Daerim America, Inc. P. O. Box 826 Kodiak, AK 99614		Herring Sac Roe
Dragnet Fisheries P. O. Box 3993 Kenai, AK 99611		Salmon
Fairmount Island Seafoods, Inc. P. O. Box 668 Whittier, AK 99696		Herring Eggs on Kelp
Favco, Incorporated 1205 W. 29th Avenue Anchorage, AK 99503		Salmon
Glacier Packing Company Barbara Jensen, Supt. P. O. Box 294 Cordova, AK 99574	6 1/2 oz. - hand pack 7 1/2 oz. - hand pack	Salmon
Hamco American River Processors P. O. Box 745 Kodiak, AK 99615		Herring Sac Roe
JMC Enterprises H. J. Carlson, President P. O. Box 10048 Anchorage, AK 99511		Salmon Herring Eggs on Kelp
The Little Fisherman 555 W. Northern Lights Blvd. Anchorage, AK 99503		Salmon
Martin Seafoods 800 Ocean Dock Road Anchorage, AK 99501		Salmon

continued,

Appendix A, continued.

Name- Executive, Address, Location of Operation	Size of Cans Lines of Machinery	Type of Product
Mohr & Johannsen P. O. Box 494 Cordova, AK 99574		Salmon
M.S.P. Corporation C. Ross Mullins, Supt. P. O. Box 1249 Cordova, AK 99574		Herring Eggs on Kelp
Morpac, Inc. [1] John Hewitt, Supt. P. O. Box 368 Cordova, AK 99574		Salmon Herring Sac Roe
North Coast Seafood Processors, Inc. James Nagai, Supt. P. O. Box 1262 Cordova, AK 99574		Herring Eggs on Kelp Herring Sac Roe
Newby, Richard A. 2510 Aspen Drive Anchorage, AK 99503		Herring Eggs on Kelp
North Pacific Processors, Inc. Ken Roemhildt, Supt. P. O. Box 1040 Cordova, AK 99574	1 line - 1/4 lb. 1 line - 1/2 lb. 1 line - 1 lb.	Salmon Herring Sac Roe Herring Bait
North Star Fisheries P. O. Box 504 Cordova, AK 99574		Salmon
Osmar's Ocean Specialties P. O. Box 38 Clam Gulch, AK 99560		Salmon
Reluctant Fisherman Restaurant P. O. Box 1309 Cordova, AK 99574		Salmon
Royal Pacific Fisheries P. O. Box 4100 Kenai, AK 99611		Herring Sac Roe

continued,

Appendix A, continued.

Name- Executive, Address, Location of Operation	Size of Cans Lines of Machinery	Type of Product
Salamatoff Seafoods, Inc. Drawer 4200 Kenai, AK 99611		Salmon Herring Sac Roe
Sea Catch, Inc. P. O. Box 3171 Kenai, AK 99611		Salmon Herring Sac Roe
Seward Fisheries, Inc. Bob Giles, Supt. P. O. Box 516 Seward, AK 99664		Salmon Bait Herring Herring Sac Roe
Seward Marine Services Margaret Anderson, Supt. P. O. Box 335 Seward, AK		Herring Sac Roe
St. Elias Ocean Products[2] Jim Poor, Supt. P. O. Box 548 Cordova, AK 99574	1 line - 1/4 lb. 1 line - 1/2 lb. 1 line - 1 lb. 1 line - 4 lb.	Salmon Bait Herring Herring Sac Roe
Suisan International, Inc. 221 Warehouse Avenue Anchorage, AK 99501		Salmon
Taylor Aquatic Enterprises Gary Taylor, Supt. P. O. Box 131 Cordova, AK 99574		Herring Eggs on Kelp
Tenth & M Lockers 1020 M Street Anchorage, AK 99501		Salmon
Virgin Bay Kelp Company Steve Smith, Supt. P. O. Box 277 Cordova, AK 99574		Herring Eggs on Kelp

continued,

Appendix A, continued.

Name- Executive, Address, Location of Operation	Size of Cans Lines of Machinery	Type of Product
Western Alaska Fisheries P. O. Box 667 Kodiak, AK 99615		Salmon Herring Sac Roe
Whitney-Fidalgo Seafoods, Inc.[2] Mike Thompson, Supt. P. O. Box 670 Cordova, AK 99574		Salmon Herring Sac Roe

[1] Morpac, Inc. customed canned salmon for Alaska Packers Association.

[2] St. Elias Ocean Products, Inc. customed canned salmon for Whitney-Fidalgo Seafoods.

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement[1], 1980.

Location	Survey Conditions[2]	Date[3]	Method[4]	Sockeye	Chinook	Coho
Copper River						
Eyak Lake		9/10	A	22,500		
		9/18	A			9,200
Hatchery Creek		7/ 9	A	800		
Power Creek (delta)		8/29	A	4,500		
Ibek Creek		9/18	A			12,110
19 Mile Creek		9/18				100
McKinley Lake		7/15	A	27,500		
		9/18	A			2,500
Salmon Creek		7/25	A	5,000		
		9/18	A			2,000
Salmon Creek Springs		8/ 4	A	3,500		
		9/10	A			2,500
26 - 27 Mile Creek		7/15	A	7,500		
39 Mile Creek		8/ 4	A	18,000		
		9/18	A			7,100
Goat Mountain Creek		7/25	A	150		
		9/18	A			800
Pleasant Creek		7/15	A	250		
		9/18	A			500
Bering River						
Tokun Lake		9/10	A	17,000		
		9/18	A			11,000
Tokun River		8/29	A	1,500		
		9/18	A			2,200
Tokun Springs		8/15	A	2,000		
Little Martin Lake		9/10	A	6,500		
		9/18	A			1,500
Little Martin Outlet		8/29	A	1,500		
Martin River		8/29	A	1,500		
		9/18	A			12,855
Martin Lake		6/24	A	17,650		
		9/18	A			4,500
Martin Feeders		7/15	A	8,500		
Martin Lake Outlet		9/10	A	1,500		
		9/10	A			2,100
Pothole Lake		9/10	A	8,000		
Pothole Outlet		7/15	A	1,000		
Ragged Point Lake		9/10	A	13,000		
Ragged Point Outlet		9/10	A	150		100
Martin River Slough		6/30	A	10,000		
		9/18	A			22,000

continued

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement[1/], 1980 (cont.).

Location	Survey Conditions[2/]	Date[3/]	Method[4/]	Sockeye	Chinook	Coho
Bremner River						
Peninsula Lake		8/15	A	1,475		
Salmon Creek		8/15	A	1,500		
Steam Boat Lake		9/3	A	300		
Unnamed Creek		9/3	A	0		
Tiekel River Lake		9/3	A	150		
Swan Lake		8/15	A	350		
Tonsina River	*					
Lower Tonsina Creek		9/3		425		
Little Tonsina River		8/10	A		70	
Tonsina Lake	*	10/30	A	650		
Bernard Creek			A	N.S.		
Grayling Creek		8/10	A		66	
Klutina River	*					
Manker Creek		8/10	A		35	
Mahlo Creek		7/22	A	1,000		
Unnamed Lake		9/3	A	1,000		
1884 Lake		9/3	A	50		
Hallet Slough	*	9/3	A	200		
Curtis Creek			A	N.S.		
St. Anne Creek		7/22	A	5,000		
Tazlina River	*					
Mendeltna Creek		9/3	A	1,125	3	
Kiana Creek		7/22	A		247	
Tazlina Lake			A	N.S.		
Gulkana River						
Mouth to West Fork				N.S.		
West Fork		7/21	A	95	26	
Moose Creek			A	N.S.		
Keg Creek		7/21	A	2,325	2	
Victor Creek		7/21	A	3,275		
West Fork to Middle Fork		7/21	A	1,500	497	
Middle Fork		7/21	A		127	
Dickey Lake		7/2	A	250		
Swede Lake		7/21	A	400		
Hungry Hollow Creek		10/16	A	250		
East Fork						
East Fork to Paxson Lake		8/11	A	3,000	35	
Paxson Lake		8/11	A	0		
Paxson Lake Inlet		9/2	A	1,100		
Inlet to Mud Creek		8/11	A	8,200		
Mud Creek		8/11	A	725		

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement [1], 1980 (cont.).

Location	Survey Conditions [2]	Date [3]	Method [4]	Sockeye	Chinook	Coho
Mud Lake		8/11	A	15		
Mud Creek to Summit Lake		8/11	A	3,075		
Fish Lake		7/21	A	3,175		
Summit Lake		7/21	A	0		
Gunn Creek		7/21	A	325		
Gakona River						
Spring Creek		7/21	A	0		
Chistochina River						
East Fork		7/21	A		575	
Eagle Creek		7/21	A	75	18	
Mankomen Lake		7/21	A	0		
Slana River	*					
Mentasta Lake		7/21	A	3,200		
Fish Creek		7/21	A	900		
Bad Crossing #1		7/21	A	55		
Bad Crossing #2		7/21	A	20		
Bone Creek			A	N.S.		
Slana Sloughs		7/21	A	100		
Suslota Lake		7/21	A	1,700		
Indian River		7/21	A		24	
Ahtell Creek		7/21			0	
Tanada Creek						
Tanada Lake		9/2	A	4,200		
Tanada Lake Outlet		9/2	A	9,500		
Copper Creek						
Copper Lake		9/2	A	35		
Tebay River		8/15	A		5	
Chokosna River		8/15	A	350		
Lakina River	*					
Long Lake		10/30	A	2,650		
Clear Creek (Chitina R.)				N.S.		
Tana River	*					
Tana River Clear Channels		8/15	A	1,560		
Tana Lake Inlet	*	8/15	A	500		
West Fork Clear Channels		8/15	A	70		

Appendix Table B. Copper River and Bering River sockeye, chinook and coho salmon escapement[1/], 1980 (cont.).

Location	Survey Conditions[2/]	Date[3/]	Method[4/]	Sockeye	Chinook	Coho

1/ Escapement refers to peak survey.

2/ * denotes glacial.

3/ Date refers to peak sockeye salmon escapement; it may or may not apply to peak chinook or coho salmon counts.

4/ A = air
W = weir
G = ground

5/ Fish Creek Weir Count - 11,063

6/ Long Lake Weir Count - 38,500 (preliminary)

Appendix
Table C. Coghill River field camp climatological and stream observations, 1980.

Date	Temperatures Air (F°) Min.	Air (F°) Max.	Water (F°) 0900	Water (F°) 2100	Precip. 0900	Cloud Cover[1/] 0900	Cloud Cover[1/] 2100	Water Gauge 0900	Comments
6/ 6	36	69	39.2	37.4	0	1	3	0	
6/ 7	43	62	33.8	32.0	.13	3	3	+ 63.5	
6/ 8	37	68	32	35.6	0	2	1		
6/ 9	35	66	35.6	33.8	0	2	2		
6/10	42	54	33.8	33.8	.25	4	4		ice
6/11	41	52	33.8	33.8	.25	4	4		ice
6/12	41	56	33.8	33.8	.04	4	4		ice
6/13	41	55	33.8	33.8	.35	4	4		ice
6/14	40	57	33.8	35.6	0	4	3		
6/15	35	62	37.4	35.6	.13	3	3		
6/16	40	64	37.4	37.4	0	3	2		
6/17	43	52	35.6	35.6	.35	4	4		
6/18	41	51	35.6	37.4	.50	4	4		
6/19	41	55	37.4	37.4	.04	4	4		
6/20	43	50	37.4	39.4	.58	4	4		
6/21	39	58	37.4	37.4	.09	4	3		
6/22	38	67	37.4	39.2	0	2	3		
6/23	46	65	39.2	39.2	.01	4	3		
6/24	41	58	39.2	39.2	0	4	4		
6/25	46	54	39.2	39.2	.46	4	4		
6/26	45	66	41.0	39.2	.09	4	2		
6/27	35	67	39.2	39.2	0	4	2		
6/28	47	57	39.2	39.2	.11	4	4		
6/29	44	62	41.0	41.0	0	4	3	863.6	
6/30	45	59	39.2	39.2	.35	3	1	863.6	
7/ 1	35	66	44.6	44.6	0	1	1	850.9	
7/ 2	36	70	42.8	42.8	0	1	3	838.2	
7/ 3	46	64	41	41.0	.04	4	3	838.2	
7/ 4	35	70	44.6	44.6	0	1	2	825.5	
7/ 5	39	58	44.6	46.4	.03	4	4	838.2	
7/ 6	49	57	46.8	46.4	1.20	4	4	914.4	
7/ 7	47	58	46.4	46.4	1.00	4	4	1117.6	
7/ 8	46	62	42.8	42.8	.21	4	3	1117.6	
7/ 9	46	64	41.0	41.0	.11	4	2	1066.8	
7/10	37	64	42.8	42.8	.16	4	4	990.6	
7/11	48	58	46.4	46.4	1.13	4	4	990.6	
7/12	50	57	46.4	46.4	1.45	4	4	1219.2	
7/13	48	68	44.6	41.0	.04	2	1	1231.9	
7/14	41	71	41.0	41.0	0	3	2	1117.6	
7/15	50	58	41.0	41.0	.04	4	4	1066.8	
7/16	47	60	41.0	41.0	.06	4	4	977.9	
7/17	46	64	41.0	42.8	.12	4	1	939.8	

continued

Appendix
Table C. (continued)

Date	Temperatures				Precip.	Cloud Cover[1/]		Water Gauge	Comments
	Air (F°)		Water (F°)						
	Min.	Max.	0900	2100	0900	0900	2100	0900	
7/18	35	70	42.8	42.8	0	1	1	901.7	
7/19	35	72	42.8	42.8	0	1	2	863.6	
7/20	39	73	44.6	44.6	0	1	1	850.9	
7/21	48	70	44.6	46.4	0	1	2	863.6	
7/22	44	73	44.6		0	1	2		

1/ Cloud cover code: 1 = Clear
2 - Less than 1/2 cloud cover
3 = Greater than 1/2 cloud cover
4 = Complete cloud cover

Appendix
Table D. Eshamy River field camp climatological and stream observations, 1980.

Date	Temperatures Air (F°) Min.	Air (F°) Max.	Water (F°) 0900	Water (F°) 2100	Cloud Cover[1/] 0900	Cloud Cover[1/] 2100	Water Gauge[2/] 0900
6/22	40	62	45	45	4	2	.71
6/23	40	66	46	46	3	3	.70
6/24	43	66	46	46	4	4	.66
6/25	41	64	46	46	4	4	.70
6/26	45	68	47	46	4	2	.78
6/27	42	64	48	48	2	2	.75
6/28	46	64	48	48	4	4	.70
6/29	42	67	50	50	4	4	.70
6/30	42	70	50	52	3	2	.64
7/ 1	44	75	52	52	1	1	.59
7/ 2	42	78	54	50	2	3	.54
7/ 3	42	74	54	52	2	2	.48
7/ 4	44	78	57	57	1	1	.48
7/ 5	52	70	57	54	4	4	.44
7/ 6	42	68	57	61	4	4	.50
7/ 7	44	68	57	57	4	4	.60
7/ 8	45	68	52	54	4	4	.60
7/ 9	48	70	50	52	4	1	.60
7/10	46	70	52	54	4	4	.60
7/11	54	66	54	54	4	4	.65
7/12	48	67	50	52	4	4	.78
7/13	44	70	52	54	4	2	.78
7/14	46	75	50	52	1	2	.68
7/15	46	71	49	50	4	4	.64
7/16	48	72	48	51	4	3	.62
7/17	46	70	50	50	4	3	.58
7/18	46	74	52	50	2	2	.46
7/19	46	78	56	54	2	2	.42
7/20	50	80	54	57	1	1	.38
7/21	50	76	54	55	3	4	.35
7/22	54	80	59	59	2	2	.34
7/23	52	77	61	59	3	4	.30
7/24	54	74	58	59	3	4	.29
7/25	56	74	59	59	4	4	.25
7/26	52	73	59	59	4	4	.22
7/27	52	68	58	58	4	4	.22
7/28	48	72	59	58	4	3	.23
7/29	46	66	58	59	4	4	.25
7/30	50	70	57		4	3	.34
7/31	50	72	54	54	4	4	.33
8/ 1	51	78	55	55	2	2	.31
8/ 2	48	71	55	54	4	4	.30
8/ 3	46	78	55	55	2	2	.28
8/ 4	52	76	55	54	1	1	.22

continued

Appendix
Table D, (continued)

Date	Temperatures Air (F°) Min.	Air (F°) Max.	Water (F°) 0900	Water (F°) 2100	Cloud Cover[1/] 0900	Cloud Cover[1/] 2100	Water Gauge[2/] 0900
8/ 5	48	78	55	57	1	2	.22
8/ 6	46	72	57	57	3	4	.20
8/ 7	48	71	55	55	4	4	.18
8/ 8	50	70	55	55	4	4	.18
8/ 9	52	71	55	55	4	4	.28
8/10	52	70	55	55	4	4	.40
8/11	48	72	55	55	1	2	.37
8/12	50	72	55	55	4	4	.35
8/13	48	70	55	55	4	4	.32
8/14	48	68	55	55	3	2	.30
8/15	46	66	55	55	4	4	.26
8/16	46	68	55	55	4	2	.40
8/17	44	70	55	55	4	4	.37
8/18	46	70	54	54	4	4	.34
8/19	48	70	56	55	3	4	.31
8/20	48	70	55	55	3	4	.28
8/21	45	70	54	54	4	4	.26
8/22	42	70	53	54	4	1	.23
8/23	42	72	54	54	1	1	.20
8/24	42	73	53	52	1	1	.18
8/25	42	72	54	54	1	1	.11
8/26	44	74	55	54	1	1	.10
8/27	44	72	55	55	4	4	.08
8/28	43	74	55	55	4	2	.06
8/29			54	54	4	4	.06
8/30			54	54	4	4	.06
8/31	45	66	53	54	4	4	.08
9/ 1			54		1	2	.11

1/ Cloud Cover: 1 = Clear
2 = Less than 1/2 cloud cover
3 = Greater than 1/2 cloud cover
4 = Complete cloud cover

2/ To the nearest inch.